THE LANCET.

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COURSE OF LECTURES
ON THE
DISEASES OF THE EYE,
Delivered in 1839-40,
AT THE
ROYAL SCHOOL OF ANATOMY AND MEDICINE,
MANCHESTER,
By JOHN WALKER, Esq., Surgeon.
(Second Division.)

[In our last volume we concluded an excellent practical Course of Lectures on the Diseases of the Eye, delivered by Mr. Walker. Those Lectures embraced the diseases of the appendages of the eye, and of its external tunics, the cornea and sclerotica. In the present volume we propose to publish a second course, by that gentleman, in which will be treated the diseases of the internal tunics and the humours of the eye.]

LECTURE I.

THE diseases which have hitherto been brought under your notice, in the first part of this course, have been such as relate altogether to the external and superficial textures,—the proper tunics of the eye, viz., those of the conjunctiva, cornea, and sclerotica. In *the second division*, upon which we are now entering, I shall have to direct your attention to a class of diseases, many of which are essentially different from those previously described,—I mean those affecting the deeper-seated tissues, the iris, the choroid, the retina, and the different humours. These I shall endeavour to lay before you in as intelligible and interesting a manner as I am able. I shall commence with the

Diseases of the Iris.

The iris, beyond all question, exercises an important influence in the economy of vision; regulating the number of luminous rays to be admitted into the interior of the eye, and for this purpose possessing a muscular apparatus, capable of contracting or enlarging its pupillary aperture, according to the varying intensity of the light. Any morbid process which interferes with the due exercise of its function, must necessarily be prejudicial to the perfection of sight. Structures which are destined for rapid movement are always endowed with a high degree of vascularity, as well as of a refined sensibility; and the iris is therefore liable to be affected by the various morbid agents which act on the vascular, nervous, and muscular tissues.

Inflammation is the most frequent morbid condition to which the iris is subject, and, when affecting this structure, it is named *iritis*.

The more prominent symptoms of iritis I have enumerated on several previous occasions. Those most commonly noticed are the peculiar vascular pink zone on the surface of the sclerotica; contraction, immobility, and irregularity in the shape of the pupil; deposit of opaque matter on the capsule of the crystalline; alteration of the colour of the iris; pustules or tubercles on its anterior surface; and effusion of pus, or other fluid, into the anterior chamber.

These are the leading symptoms which characterise the presence of iritis. There are others likewise ordinarily present, which are observable in most inflammatory diseases of the eye, such as lacrymation, intolerance of light, and pain in the organ and surrounding parts.

I shall make a few observations on each of these phenomena, in the order detailed.

And, first, I shall speak *of the vascular zone*. I have already explained that the pink vessels observed in a case of iritis, are those which pass between the conjunctiva and sclerotica, and perforate the latter texture just posterior to its junction with the cornea, and which are called the anterior ciliary arteries. These vessels are few in number at the periphery of the eyeball, and of moderate size; but, as they approach the cornea, at a distance of a few lines from it, they subdivide, become exceedingly numerous and minute, and have a radiated appearance. At the distance of about a line from the margin of the cornea they cease to be visible,

as at this point they perforate the sclerotica in their passage into the interior of the eye. These vessels, when fully developed, as I have said, are exceedingly numerous at the distance of from one to three or four lines from the margin of the cornea; and as they are discernible at the like distance all round the anterior part of the sclerotica, they form a ring or zone, which is exceedingly striking, and constitutes what is termed the *pink zone*. As they perforate the sclerotica at a little distance from the cornea, there is, consequently, a clear, white space intervening, forming the white circle or zone which, by some writers, has been erroneously termed the *arthritic circle*. The red zone, which I formerly described as occurring in some cases of corneitis, is formed by a band of red conjunctival vessels running upon and around the margin of the cornea. I mention this last, again, for the purpose of contrasting it with the others, and impressing their differences more forcibly in your memories.

In some instances, these different circles are well-marked and very striking; in others they are but partial, and therefore less obvious. In the more acute cases of iritis, the pink zone is generally well-defined and clear; but, in those of less intense character, it is not so apparent. The white circle depends for its existence upon the presence or absence of the red conjunctival vessels. If there be conjunctivitis present, the superficial vessels reaching to the border of the cornea, it is obvious that the white circle will be imperceptible. If the conjunctivitis be partial, we may then find that the upper or lower half of the circle is observable, whilst the remaining portion is obscured by the red vessels; and thus we may notice either a complete or partial circle, or an absence of it altogether. Indeed, conjunctival inflammation sometimes occurs to such an extent, as completely to mask the appearance of the vessels underneath. So, also, if sclerotitis exist in conjunction with iritis, it will be seen that the coloured and vascular condition of that texture surrounding the cornea, will prevent the white circle from being apparent. And these I believe to be the conditions which determine the presence or absence of these different zones, about which so much has been said.

The next point to which I shall refer, is *the condition of the pupil* in iritis. A contraction of the pupil is often one of the earliest indications of inflammation of the iris. At the same time we must bear in mind, that a rather contracted state of the pupil is the normal condition of that aperture in very many individuals. Nevertheless, if, in addition to the vascular state of the eye previously described, the pupil is observed to be inordinately contracted, and not to expand under the influence of diminished light, we may suspect that inflammation of the iris has commenced. But this condition alone is not decisive of the existence of iritis, because the pupil is often considerably contracted in acute external ophthalmia, in consequence of the iris participating in the morbid sensibility of the whole eye. When there is, at the same time, irregularity in the shape of the pupil, this is likely to prove a more correct diagnostic of the presence of iritis.

If the pupil be fixed in the contracted state, and incapable of dilatation, it usually arises from adhesions having formed between the posterior surface of the iris and the capsule of the crystalline; which textures, you will remember, are very nearly in contact, being separated only by a very minute quantity of fluid. Now, the surfaces of the iris, both anterior and posterior, are formed by a fine membrane of the serous class, which is continued on to the surface of the capsule, and is supposed to secrete the fluid called the aqueous humour. This membrane is perfectly analogous to the other serous tissues, such as the pleura; and we find that, when it is inflamed, lymph is thrown out, and adhesions are formed between the opposing surfaces, just as is observed in pleuritis. It will be seen then, that adhesions having formed between the movable structure of the iris and the immovable covering of the crystalline, the mobility of the former, if the adhesions are general, is entirely destroyed. If the adhesions are slight and partial, then certain portions of the pupillary margin of the iris gradually expand, as the inflammatory action subsides, whilst the adherent portions remain fixed by their attachment to the capsule, and thus a more or less irregular form is communicated to the pupil. These adhesions may, of course, exist at any portion of the iris, and, according to their situation, the pupil will be drawn upwards, or downwards, or in any other direction, its figure being most commonly rendered oval, but sometimes so irregular as to be perfectly shapeless. An irregular form of the pupil, however, is not essential to iritis, for we often find that, in the more severe cases, the whole of the iris becomes uniformly adherent to the capsule, and then the pupil retains its rotundity.

Deposit of opaque matter on the capsule of the crystalline always occurs when there is adhesion between it and the iris. If the inflammatory action continue and extend, lymph is thrown out beyond the pupillary margin, the clear transparent membrane behind the pupil becomes covered with the effused matter, and an opaque condition of the capsule, or, perhaps rather, the serous membrane covering the capsule, is the consequence. This is usually one of the most serious results of iritis, because the opacity of the capsule, when general, constitutes a complete barrier to the transmission of light into the interior of the eye, and it is a much

more frequent cause of impaired vision than an actual closure of the pupil.

Change of the colour of the iris is a frequent accompaniment of inflammation of its texture. This results from deposit of albuminous matter on the anterior surface of the iris. The anterior surface, as I have said, is probably a continuation of the membrane of the aqueous humour, and, in the normal state, is perfectly transparent, so as to permit the colouring matter of the iris to be visible through it. It is obvious, then, that if this transparency be impaired by an opaque deposit, the colour of the iris will assume an altered appearance. Accordingly, the light-coloured iris, when seen through this partially opaque or turbid membrane, appears of a greenish tint, whilst the dark-coloured iris becomes of a reddish colour. More rarely, it happens that the discoloration is caused by a deposition into the proper texture of the iris.

Pustules, or *tubercles*, are also, sometimes, observable on the anterior surface of the iris. These are probably seated under the serous membrane, which is elevated by them; in some instances they are of considerable size, more commonly, however, not being larger than a pin's-head. Generally the matter contained in them becomes ultimately absorbed, when the pustular elevations disappear. It is thought by some practitioners, that the matter is occasionally discharged into the aqueous humour.

Effusion of puriform fluid into the anterior chamber is frequently witnessed during the progress of iritis. In some instances, this may occur from a pustule or tubercle discharging itself into the aqueous humour; but, generally, it is the result of a morbid secretion from the serous membrane lining the aqueous chambers. This secretion bears a strong resemblance to pus, being of a yellowish colour, and sinking to the most depending part of the anterior chamber. The quantity of this fluid is sometimes considerable, so much so as to fill the larger portion of the chamber; and I have seen instances where it has appeared completely full. Generally, however, the quantity is not very great, and seldom occupies more than a third, often much less, of the space usually filled with the aqueous humour. This condition is technically named *hypopion*. As the inflammatory action subsides, the effused fluid is found to disappear, doubtless by the process of absorption.

It can scarcely ever happen that all the symptoms which I have enumerated are present in the same case. In some instances, in addition to the pink vessels on the surface of the sclerotica, there is merely an unusual degree of contraction of the pupil, and a slight haziness, or discoloration, of the iris, with or without an opaque deposit on the capsule of the lens. In others, besides the external vascularity, one or more pustular elevations will be discerned about the pupillary margin, the pupil somewhat contracted and of an irregular form, the surface of the iris muddy, and perhaps an effusion of purulent-looking fluid in the anterior chamber. These are the most common appearances which the iris presents during the acute stage of iritis.

The symptoms of iritis differ also in intensity. Sometimes the vascularity is excessive, and the various changes in the condition of the eye, which I have described, are effected with great rapidity. At other times, the vascularity is less striking, and the alterations in the structure and appearance of the iris and capsule are slowly and partially developed.

The amount of suffering which the patient experiences is likewise variable. In many cases, there is but little pain complained of, and the general health of the patient is unaffected; while in others, there is considerable circum-orbital pain, and sometimes a throbbing sensation in the organ itself, with febrile disturbance. The degree of intolerance of light, and the amount of lacrymation, are also liable to the same differences.

Although the vascularity of the eye is principally caused by the development of the pink vessels, yet in many cases, as I have before stated, there is a considerable degree of conjunctivitis present. This latter condition, however, arises out of the general excitement of the organ, and is not essential to the iritic inflammation. The cornea, likewise, but seldom participates in the inflammatory action, although we now and then meet with cases of corneitis, in which the morbid action appears to extend from the inner lining of the cornea on to the surface of the iris, and thus give rise to the formation of pustules, or the effusion of puriform matter into the anterior chamber.

Iritis, indeed, not unfrequently exists without any of the other textures of the eye participating in the disordered action; but still it occasionally happens that it extends to the neighbouring structures. This may be the case, not only with those situated externally, as the conjunctiva, cornea, and sclerotica, but the deeper-seated textures may also be implicated, and the disease extend to the choroid, retina, and the contents of the posterior chamber generally. This latter condition, however, I apprehend, is not usually the result of morbid action extending from the iris internally, but the contrary.

The *causes* of iritis, as far as these can be traced, are not different from those which excite other forms of ophthalmia, such as exposure to cold, and the like. This disease is often excited by direct mechanical irritation, such as wounds inflicted on the eye, in which the iris has been injured. It is also a frequent result of operations upon the eye, particularly those for the solution and depression of cataract. Iritis is also particularly apt to occur as one of the sequelæ of syphilis.

The *treatment* of iritis should be conducted with energy and judgment. If the case be seen early, and before the adhesive process is properly established, there is good reason to hope that our efforts to arrest the diseased action will be successful. The chief agents to be employed to effect this end are blood-letting and mercury.

The relative merits of these two powerful agents are by no means clearly established. Some practitioners are of opinion, that one may be safely employed to the exclusion of the other. My own opinion is, that, as a general rule, their employment in conjunction is the safest practice. Still I have no doubt that many cases are curable with either. Thus, I have often known, in cases in which I had prescribed blood-letting to be followed by mercury, that the disease had yielded almost immediately after the abstraction of blood, and before the mercury had had time to produce any perceptible effect on the constitution. In other instances, it has frequently happened that after blood-letting had been practised several times, and the disease yet continued to progress, no sooner were the peculiar effects of the mercury visible than the morbid action at once ceased, and a rapid improvement resulted. I think blood-letting is more likely to be effective, when resorted to previously to the effusion of lymph or pus; and, on the other hand, that when effusion has taken place, mercury will be found to be the most efficient remedy.

The quantity of blood to be withdrawn, and the method of obtaining it, will depend upon the peculiarities of the individual case, more particularly the strength of system of the patient, and the intensity of the local and general symptoms. If the patient be tolerably robust, the vascularity considerable, and there be much febrile excitement present, then the free abstraction of blood from a vein ought to be practised, the quantity to be regulated by the effects produced on the system, and the appearance of the eye, during the operation. Should the inflammatory action not be materially diminished on the following day, and the strength of the patient not materially reduced, venesection may properly be repeated. If this, however, should appear unadvisable from the condition of the patient, we may recommend the application of a number of leeches around the orbital region, or the cupping apparatus to the temple. The number of repetitions which may be requisite will depend so much on circumstances, as to render it difficult to lay down any general rule on this point. In a case of less severe character, or in which the constitution of the patient is delicate, venesection may be superseded by cupping, or the application of leeches.

The employment of mercury in iritis, is second only to blood-letting. Its administration should be commenced immediately, because it is uncertain what length of time it may be necessary to continue it, before the peculiar effects which it produces will be observed. In some persons, we know that these effects are readily produced, while in others it is exactly the reverse. In an acute case, where it is desirable to produce these effects without much loss of time, I usually find that doses of five or six grains of calomel, given every three or four hours, are most to be depended upon. In less urgent cases, I usually prescribe ten grains of blue pill to be taken every four or six hours. In delicate persons, and in children of strumous constitution, and in those individuals who are more readily affected by mercury, I generally substitute small doses of calomel, or of the hydrargyrum cum cretâ, for the more energetic formulæ before mentioned.

On the other hand, if a difficulty be experienced in producing the full effects of mercury, then the employment of mercurial ointment by friction should be resorted to. We are generally advised to rub it on the inside of the thighs or arms, but I think I have found it to be more successful when rubbed underneath the jaws.

The length of time which it may be necessary to continue the exhibition of mercury, must be regulated by its effects both on the system at large and on the condition of the eye in particular. It is obvious that after ptyalism, or considerable ulceration of the gums, has been produced, the remedy must either be discontinued, or its exhibition be considerably restrained. If, with these effects on the salivary system, the condition of the eye be simultaneously improved, as denoted by the diminished vascularity, the partial absorption of the effused matter, the gradually-dilating condition of the pupil, and the diminution of pain, then the mercury may be at least temporarily discontinued, its resumption to be regulated by the cessation or continuance of the morbid action which led to its original use.

The next remedy of importance, after blood-letting and mercury, is the local use of belladonna. You cannot begin the employment of this remedy at too early a period of the treatment, because if adhesions are not already formed, the dilatation of the pupil will be easily accomplished; and if the adhesive process is established, then, so soon as the adhesions begin to yield, the belladonna will produce its peculiar effect on the iris. You will perceive, therefore, that it is most important to have recourse to it in the very earliest stage of iritis, if possible before adhesions are formed; because, otherwise, it will not produce the proper effect until the morbid action is subsiding, and therefore when it is less needed.

The two most material consequences we have to fear, in a case of iritis, as I have before intimated, are a fixed contraction of the pupil, and a deposit of lymph on the capsule. In some cases of iritis, the pupil

becomes actually obliterated, by which I mean the fibres forming the pupillary margin of the iris are approximated, or at least agglutinated together by the intervention of coagulable lymph, which is poured out from the surfaces of the iris, during the state of extreme contraction of the pupil. More commonly, however, vision is impaired from the deposition of lymph on the clear, transparent texture immediately behind the pupil. Sometimes this deposit becomes speedily organised, and remains permanently adherent to the capsule; on other occasions, it becomes absorbed, and the transparency of the capsule is restored. It may be that the deposition of lymph results from the extension of the inflammatory action to the capsule, but it is more commonly supposed to be secreted from the surface of the iris itself. If this latter opinion be correct, we perceive the importance of procuring a dilatation of the pupil, so as to remove the iris to a distance from the centre, and towards the circumference of the capsule. The use of belladonna, then, so as to maintain an artificial dilatation of the pupil, is a matter of importance in the treatment of iritis.

And here you may perhaps be inclined to ask for an explanation of the peculiar effect of belladonna on the iris. This involves the question of the mobility of that texture. Now, although there is a difference of opinion as to the cause of the mobility of the iris, yet the view generally entertained is decidedly in favour of muscularity. The motions of the iris, then, I venture to state, are accomplished by two sets of fibres; a set of circular fibres surrounding the margin of the pupil, and a set of radiated fibres proceeding from the former towards the ciliary or outer margin of the iris. The actions of these opposing muscular fibres are regulated by branches from the third and fifth pairs of nerves, through the ophthalmic ganglion; the former exciting the radiated, the latter the circular fibres. Other branches of the fifth are also freely distributed to the iris, palpebræ, and eyebrows; these latter are the medium of communicating the narcotic effect of the belladonna to the circular fibres of the iris, which, by its influence, become paralysed; and thus the radiating fibres, having no antagonist, cause an expansion of the pupil, by drawing the substance of the iris towards the ciliary margin. This appears to me the most rational explanation that can be given of the action of narcotic substances upon the iris. I cannot here give more than this general statement of my views on this subject, and for further information I must refer you to my physiological treatise on the eye.

The ordinary mode of employing belladonna is, by freely rubbing the moistened extract on the outer surface of the palpebræ, and on the skin of the eyebrows; and a portion should also be spread on a piece of soft linen, and laid over the whole orbital region. It should be kept constantly applied, and often renewed, particularly in the evening, because, during sleep, there is the greatest tendency to contraction of the pupil. Some practitioners introduce a few drops of a solution of the extract upon the conjunctival surface; but this is not so proper in the acute stage of the disease, since it increases irritation, and is, probably, not more efficacious than when applied to the cutaneous surface.

Belladonna is the substance most to be depended upon for producing dilatation of the pupil; but there are two or three other vegetable productions which have a similar effect, such as hyoscyamus, stramonium, and lauro-cerasus. These substances have been long known to produce this peculiar effect on the iris, but the subject was first brought before the profession in a methodical manner by Professor Himly, in 1801.

Blood-letting, mercury, and belladonna, then, are the remedies on which we must chiefly rely for the successful treatment of iritis. Other remedies, however, are sometimes had recourse to. Within the last few years, spirit of turpentine has been successfully employed, particularly in cases in which mercury is considered objectionable. Mr. Hugh Carmichael was the first to suggest this remedy, which he prescribed in drachm doses, given with almond emulsion; and it appears that the disease has been frequently cured, and with as much facility, by it as after the use of mercury. If mercury be sometimes an objectionable remedy, turpentine would seem to be at all times a disagreeable one; and, as mercury appears to be more certain in its effects, it is hardly likely to be superseded by turpentine: the latter medicine seems to operate by producing a considerable amount of irritation in the urinary organs; in fact, its action is that of a counter-irritant. It is doubtful if mercury act in a different manner; its superior value being probably owing to the more powerful and lasting effect produced on the salivary system, and through it on the system at large.

If, during the progress of the disease, the patient should experience much pain in the organ or neighbouring textures, which, when it occurs, is usually of a neuralgic character, the employment of opium, both internally and by friction, in the manner before explained, when speaking of the treatment of sclerotitis, will be advisable. Indeed, opium may be administered in combination with the mercury which is exhibited, except there should be some particular reason to the contrary.

Purgatives, diaphoretics, and other remedies, will, under certain circumstances, be necessary; these I need not dwell upon, as they are sufficiently obvious.

Local applications are of little or no use in the acute stage of iritis, except, indeed, such as are of a sedative character, as the extract of belladonna, mercurial ointment, with opium, and the like.

Chronic Iritis.

The observations already offered are more particularly applicable to the acute form of iritis. If the disease have existed for some considerable time before we see the patient, or if it be of a less active character, the symptoms may be somewhat modified; the vascularity, although possessing the peculiarities before pointed out, may be of trifling extent, the irritation less severe, the patient complaining of little but imperfection of vision. In this state the pupil will be more or less contracted, motionless, and of irregular form; an opaque deposit will probably occupy a considerable part of the capsule immediately behind the pupil; or, if the disease be in a still more advanced stage, we may find that the iris has a puckered and very irregular appearance, some portions of its surface bulging forwards, and others drawn backwards. This last condition probably depends upon extensive adhesions to the capsule of the lens, more or less complete at various points (synechia posterior), and is not often witnessed except in conjunction with a morbid condition of the deeper-seated textures, particularly the choroid. In many of these cases, the aqueous humour being no longer secreted in sufficient quantity, the iris is gradually pushed forwards, and with it, probably, the opaque capsule and lens, until it comes in contact with the inner surface of the cornea, when the anterior chamber is obliterated, constituting the condition termed *synechia anterior*. In this event, however, I do not imagine that the iris becomes adherent to the cornea, as some suppose, except there has been actual disease of the latter texture, the adhesive process having terminated long before this stage of the disease arrives.

In other instances, in addition to contracted pupil and opaque capsule, I have occasionally noticed a decided vascularity of the iris itself, vessels being clearly traceable from the sclerotica on to the iris, forming a plexus over its entire surface, and that of the opaque capsule. In some rare cases, too, I have witnessed effusion of blood into the anterior chamber; this has generally occurred in cases in which the disease has been protracted, and liable to frequent exacerbations.

In chronic iritis, then, the vascularity being inconsiderable, and the morbid process of a slow and inactive character, the treatment need not be of that energetic character as to call for much blood-letting. In some instances, it may be necessary to cup the temple, or to apply a few leeches around the eye. If there be scarcely any vascularity, and we have but the effects of the morbid action to contend with, then blood-letting will not be of any service, and we must trust more particularly to the internal exhibition of mercury, the local application of belladonna, and the use of counter-irritants.

Mercury should be given in smaller quantities, and not so frequently repeated as in the acute form of iritis, as the object of the practitioner should be not to create a violent, but a more continuous effect on the system. With this view, from five to ten grains of the mercurial pill may be given night and morning to an adult; and to children, one or two grains of calomel, or the hydrargyrum cum cretâ, at the like intervals. This treatment it is usually necessary to continue for some time before any perceptible change in the condition of the eye is produced, or before the system evinces any decided effect from its employment.

The extract of belladonna should be applied every night to the eyebrows and lids, and a small portion should also be introduced within the margin of the lower lid, so as to come in contact with the conjunctival surface; or a strong solution of the extract may be applied to the conjunctiva, by means of a camel-hair brush, once or twice a-day. I am not sure that belladonna has any very powerful influence in separating adhesions when once formed; but its application may be useful in causing a dilatation of the non-adherent portions of the pupillary margin, and may thus be serviceable in preventing new adhesions forming. Indeed, its employment may tend to throw considerable light on cases which appear obscure and uncertain; since, if the pupil dilate irregularly, it is a clear proof that there are partial adhesions with the capsule, and that inflammation and effusion have existed; and, if the adherent surfaces are separated under its use, it will be likewise a proof of the subsidence of the morbid action, and will assist in determining the propriety of continuing, or otherwise, the remedies best adapted for its subduction.

Counter-irritation I am inclined to recommend in the advanced stage of iritis; it may be produced by the occasional application of blisters, or tartar emetic ointment, to the temple; or a permanent drain may be established by means of a seton or issue, according to circumstances.

In the more protracted cases of iritis, particularly such as are accompanied by an enlarged and varicose condition of the vessels, I have found very beneficial results from the application of stimulants to the conjunctival surface of the lids. These can only properly be resorted to after the acute stage has passed away. I have ascertained, by careful experiments, that their use in acute internal ophthalmia is not to be commended. In one case of iritis, which, although it had existed for several weeks, was attended with considerable vascular excitement, I applied the nitrate of silver in the usual manner, and found that its use was followed by an effusion of puriform fluid into the anterior chamber; the effused fluid, however, gradually became absorbed, and, although its employment in

this case was not prejudicial, since the eye ultimately recovered completely, yet I could not observe any indication for its future use. In a more advanced stage, however, I am quite satisfied that it will often prove a valuable agent.

Syphilitic Iritis.

I have already stated that syphilitic disease often extends to the iris, and give rise to acute inflammation of its texture. This is a very frequent occurrence, so much so that when we find iritis among a certain class of individuals, we immediately inquire if there are any other symptoms of syphilis, either primary or secondary. Iritis is most commonly met with among the secondary or constitutional symptoms of lues, such as ulceration of the throat and eruptive disease of the skin. It is as well that you should be conversant with this fact, so as to be aware of the frequent combination of syphilis with iritis; but I do not know that it will lead to any practical results, since the treatment of iritis, however excited, must always be conducted on the principles I have laid down. Nor are there any diagnostic symptoms which could enable a practitioner to say, by merely examining an eye thus affected, that such a case is syphilitic or otherwise. It was formerly thought that the existence of tubercles and the displacement of the pupil upwards, were decisive of the syphilitic origin of the disease. Such a notion, however, is now completely exploded.

You will find in several of our modern works very elaborate articles on the subject of syphilitic, rheumatic, arthritic, and strumous iritis. The conditions of the system indicated by these different epithets render the eye, perhaps, somewhat more disposed to be affected by disease than in persons of a healthy constitution; but that such conditions materially or perceptibly modify the characters of ophthalmia generally, or of iritis in particular, is, to my mind, certainly not established. Moreover, the treatment admits of no further modification, so far as the eye is concerned, than that I have already pointed out, and which relates more to the intensity and duration of the disease than to the exciting cause.

In whatever kind of constitution iritis occurs, it will require blood-letting and mercury, if the activity be considerable; but, in a person of delicate or strumous constitution, these remedies should be sparingly employed, and their use speedily followed by the exhibition of quinine and other tonics. If iritis occur in a person of a rheumatic or gouty diathesis, then colchicum and other suitable remedies may be employed in conjunction with those I have before advised.

When iritis is observed in very young children, it is, probably, usually in connection either with a strumous or syphilitic taint; and, in these cases, I have generally found, if the pupil have not become fixed, and the deposit on the capsule organised, before the patient has been brought, that the symptoms have yielded to the exhibition of small doses of calomel, or hydrargyrum cum cretâ, two or three times a day, and the local application of belladonna. Leeches will also be proper, if the vascularity be considerable. Iritis is not very commonly met with in infants, but this occasionally happens. During the last two years, I have witnessed four cases between the ages of four and eight months. In one of these, one eye had been attacked with purulent ophthalmia at the period of birth, from which it had completely recovered under proper treatment; the other eye was attacked with iritis at the age of five months, from which it also recovered, leaving the pupil contracted and irregular, but without any opacity of the capsule. In this instance, it was admitted that the parents had been affected with some form of venereal complaint.

AN

INQUIRY INTO SOME

OF THE

CONSEQUENCES AND CAUSES OF FAILURE

OF THE

NEW OPERATION

FOR THE CURE OF

STRABISMUS, OR SQUINTING.

By E. W. DUFFIN, *Esq., Surgeon.*

As the arguments adduced in my last communication, to explain the facts connected with the two singular cases therein related, are not founded on the ordinarily received doctrines of modern physiologists, and did not take into consideration the influence of the oblique muscles, I am aware they are in this respect highly objectionable; still as they appeared reasonable, and so directly to support the old theory, that *apparent* identity of origin, and intercommunication of nerves in their course, are calculated to produce similarity of function, or mutual co-operation in the action of the muscles to which they are distributed, I ventured to introduce them, even at the hazard of being considered, *pro tempore*, ignorant of the current opinions maintained at the present day on this subject. The researches of Drs. Monro, Whytt, Müller, Alison, and others have, I believe, been quite successful in establishing,—1. That, although nerves may lie in juxta-position in the same sheath, they never absolutely anastomose. 2. That apparent identity of origin does not by any means imply identity, or even similarity of function;

and, 3. That all nerves perform their functions independently of each other. *

The opinion of Mr. Walker, of Manchester, that the parallelism of the eyes is preserved by the action of the superior oblique muscle, although very ingenious, is, of course, completely negatived by the results that have uniformly followed the division of the adductor. Were Mr. W.'s views correct, we should expect that the eyes would preserve their consentaneous movements inwards after the operation, because the superior oblique still remains uninjured for that purpose; but we find the reverse,—the eye cannot be turned inwards, either in conjunction with its fellow, or consentaneously in this direction, when its fellow is turned outwards. And, when under certain circumstances, that will be presently noticed, the pupil does turn a little inwards, after the adductor is divided, we now know that this movement is more the result of the conjoined action of the inner fibres of the superior and inferior recti, than dependent on the contractions of the superior oblique; and that cutting these inner fibres, though not the most judicious mode of proceeding, always rectifies the position. As the contractions, however, of the oblique muscles, judging from the direction of their fibres, as well as from the expanse of their tendinous insertions, are calculated to draw the eye a little inwards, and to slightly rotate the globe, it is possible that these muscles may, in some degree, act as antagonists to the external rectus when the adductor is divided, and be a principal cause why the pupil does not turn outwards by the action of this muscle as a general rule. For want, then, of a more precise and satisfactory rationale of the first girl's case, related in my second communication, although liable to innumerable objections, it appears to me that we must be content for the present to adopt the theory of Professor Alison, "that the sympathetic movements of the eyes, like sympathies in general, proceed from *mental sensations*, and that they sympathise with each other only so far as the sensation, which is the natural and appropriate stimulus of the one, is excitable by irritation of the other."

It is not, however, my intention to weary the reader by burdening my practical facts with a lengthened physiological inquiry into their cause, however interesting and tempting such a discussion may be, having it in view to correct and publish these communications hereafter in a separate volume, illustrated with appropriate engravings, when I shall have more leisure and space to follow up the investigation. My present remarks, therefore, will, I trust, be considered the hasty results of practical experience, which I am anxious should be made known, before they can be appropriated and promulgated by others.

At first sight it may appear unnecessary to warn those who have not directed their attention to the subject of strabismus, that they are very liable to select the wrong eye for operation; but I can assure them it is often no very easy matter to determine which side is most affected, or whether the individual squints with only one or both eyes.

Mr. Crommelink informs us, that having had an opportunity of examining a great number of persons affected with squinting, he is disposed to confirm the statement of Buffon, "that strabismus never affects both eyes simultaneously." "Where one eye," says he, "is much affected, the other, at first sight, no doubt, seems equally so; but when operation restores the distorted eye to its natural position, the opposite one loses its apparent deviation, either immediately or after a short time."*

In the majority of instances this opinion is correct; but I cannot assent to the statement that strabismus "never affects both eyes simultaneously," because I have seen very numerous examples to the contrary, and have been obliged to operate on the second eye also. This I have done, not only with the effect of totally removing every vestige of strabismus, but with the still further advantage of leaving both eyes so precisely similar in general contour, size, and appearance, that even the most critical observer could detect no trace of former distortion, nor perceive any evidence that an operation had been performed, beyond the slight remains of cicatrix resulting from the wound made in the conjunctival covering.

Unless a case will stand this test, I do not consider it entitled to the epithet *perfect*, since I can produce, for the satisfaction of the curious or incredulous, numerous examples of this degree of perfection. Everything short of this, although the original obliquity may have been removed, I consider an evidence of only partial success.

But to return to the question, whether squinting ever occurs in both eyes simultaneously, I believe the more general rule to be, that the distortion very rarely *assails* both eyes at the same precise period, but that in the course of time both may become affected; the second being gradually implicated by sympathy, or the unconscious efforts which the patient makes to render the axis the same in both organs, in order to obviate double vision; and although for a length of time the distortion may continue to be of such a nature, that removing it from the eye which was first attacked will remedy the defect in that subsequently involved, yet, in a great many cases, it becomes a permanent disorder in both, especially if, dur-

* Vide the article by Professor Alison in the 2nd vol. of the Edinb. Med. Chirurg. Transact.

* Dublin Medical Press, No. LXXXVIII.

ing its continuance, the eye has been the subject of strumous or other inflammation, calculated to produce any thickening, contraction, or other morbid change in the submuscular cellular tissue. I have always found, when the operation consisted of more than dividing the tendon, and the strabismus was at the same time of long duration, that ultimately the second eye required operation also, before the position of these organs was rendered perfect in every respect. It is always proper, however, to operate on only one eye at a time, and of course we ought to select the most faulty, viz., the one primitively affected, and afford the other the chance, for a week or two, of rectifying itself without an operation.'

"The degree of power," says Mr. Guthrie, "that a person possesses over his eyes is occasionally very doubtful, on the first inspection of them, both eyes squinting in turn or together, and it is only after a little delay that the really defective eye can be clearly ascertained; whilst in others, the motions of the eye are altogether so irregular, and so little under control, that it becomes doubtful which muscle should be divided, or whether it would be proper to attempt any operation at all." When, then, we cannot determine this question by inspecting the eyes, and desiring the patient to look at an object placed alternately on each side of his nose, so as to enable us to estimate which pupil is capable of being turned most inwards, we shall generally be assisted by the knowledge which the individual possesses of his own case, except in children, when we must either rely on our own judgment, or such information as we can obtain from the parents or friends of the party.

The sight of the eye most affected is very often somewhat impaired, and in many cases partially amaurotic; indeed, one of the most important results of the operation, in numerous instances, is the subsequent gradual improvement of vision. A person who squints considerably, cannot see an object with both eyes at once; hence many persons affected with strabismus imagine themselves to be near-sighted, because, in order to see an object distinctly, i.e. to obtain the advantage of seeing it with both eyes at the same time, they are obliged to hold it near the face, that they may bring it within the axis of each. But as soon as the distortion is removed by operation, not only is this near-sightedness cured, but the imperfection of vision, proceeding from the image not being depicted on the most sensitive part of the retina, that destined to receive visual impressions and transmit them to the sensorium, very soon ceases.

Although, as just remarked, the degree of power possessed by a person who squints over his eyes is occasionally doubtful, in the majority of cases it is by no means limited. On the contrary, by an act of volition, we shall find that the eye is capable of the same movements, and to an almost similar extent, as if it were in every respect free. If the palpebræ of the best or sound eye be closed, and gentle pressure made on the globe, so as to steady it, the faulty eye, provided it be not prevented by any unnatural adhesion, or other morbid change of structure, generally starts immediately from its abnormal situation into the proper position that it ought to occupy, nearly midway between the extreme boundaries of the inner and outer angle, and is capable of being turned outwards in *almost* any natural degree.

But as soon as the sound eye is uncovered, and the voluntary effort is discontinued, the faulty one returns again to the inner canthus. It can also be directed outwards in unison with its fellow, when the individual looks at an object placed at the corresponding side of him. In short, the patient can move his eyes in any direction he chooses; but as soon as the voluntary effort ceases they yield to the morbid power, by which, when quiescent, they are controlled, and the obliquity returns.

From the want of a knowledge of these facts, many surgeons are misled in their early attempts to relieve strabismus, and erroneously consider the operation completed, when, in reality, it is only half performed; or when, perhaps, the tendon has not even been cut at all. When assisting others, I have frequently pointed out that the operation still required some further steps to render it perfect, and have been usually met by the observation, "that nothing further could possibly be requisite, as the tendon was clearly divided, and the patient possessed the power of turning the pupil outwards, the eye being straight and in its proper position when the other was covered over." The only conclusion to be drawn from this reasoning is, that the operator was not aware that the division of the tendon alone, in many cases, is insufficient to liberate the eye and remove the obliquity. The oblique movements in the directions upwards and inwards, and downwards and inwards, are, by the unpractised operator, ascribed to sympathetic influence, being satisfied if his patient cannot bury the pupil in the nasal canthus, in as great a degree as he could previously. Now, we have already seen that these *diagonal* movements do not proceed from sympathy, but from natural contractions of the superior or inferior rectus, whilst the eyeball still continues tethered by some portion of fibro-cellular attachment, and that if this be divided the operation will be complete.

The most decided test of a perfect separation of the tendon, and adventitious adhesions, is not that the eye can assume its proper position when its fellow is covered over, or that it can be directed outwards by an act of volition; but that there result from the operation a total inability to move the pupil

horizontally inwards from the natural position that it ought to occupy in the centre of the orbit, and, at the same time, an incapacity of directing it, in the slightest degree, in either of the diagonal lines above indicated. When in such case an attempt is made to look at the nose, the pupil is immediately depressed, the globe being pulled directly downwards by the action of the inferior rectus muscle.

If these conditions be fulfilled, and they *ought to be if the obliquity be confined to one eye*, we may rest assured that the ball is completely liberated.

But we cannot always obtain this decided result. It sometimes happens, indeed nearly always, when both eyes are implicated, that the operation is as perfectly performed as it can be, and that still the patient has a slight cast when he looks with both eyes at an object placed directly before him.

This we shall find to proceed from a concurrence of action of the inner fibres of the superior and inferior recti, aided, perhaps, by the action of the obliques, which, when the squint has been considerable, have likewise become involved in its production.

Be it observed, however, there is no occasion to divide these fibres, since, if there exist no permanent obliquity in the other eye, this morbid action will cease in a day or two. But if any confirmed obliquity exist in the other eye, I have always found it best to operate on it also; on doing which this vestige of the original evil has instantly ceased, never to return.

It appears that this action of the inner fibres, just described, is very feeble, and in a great measure dependent on the sympathy that exists between the two eyes, since it is only capable of being exerted so long as the tendon in the other eye continues undivided. Were we to remedy the obliquity thus produced, by dividing the inner fibres of the superior or inferior recti muscles, as had been recommended, the eye would be very prone to start forward, and impart an ungainly appearance to the individual; whereas by operating on the other organ we not only obviate the risk of this occurrence, but completely rectify both eyes; and should the eye first liberated be a little enlarged by the operation, we have it in our power to make both correspond in this particular.

Another test that the operation has been thoroughly performed, is the capability the patient acquires, of not only directing the pupil much more outwards than he could do previously, but, if the tendon of the external rectus be free to act, of turning it much more outwards than natural. Even the decided indication already insisted on, viz., a total inability to move the pupil from the centre of the orbit *horizontally* towards the nasal canthus, may be frustrated by an adherent condition of the tendon of the abductor muscle. A little experience, however, teaches the surgeon how to ascertain, by sweeping the sclerotica carefully with his blunt hook, when the liberation of the eye is complete, without being obliged to rely upon the foregoing investigation, although he should never neglect to institute it, as he is thereby, generally, enabled materially to corroborate his judgment.

Of the Double Operation of Strabismus.

For the most part, as has already been shown, although there may apparently exist an obliquity in the axes of both eyes, it will, on a careful comparison of their capabilities, be found that the affection is much more marked in one than in the other; and that on dividing the tendon, and liberating completely the globe of the most faulty eye, the axis of the other, though for a few hours, at first, often rendered more objectionable, will soon become correct, and continue so. The previous obliquity in such case had resulted simply from sympathy, or, to speak more precisely, from the constant co-operation that subsists between the two eyes in all their movements, in order to render vision with two organs a single function. I conceive it to be quite possible, although I have no positive proof on which to found my opinion, notwithstanding the statement of Buffon and others, that strabismus convergens may assail both eyes at the same time. It is evidently at its commencement a spasmodic disorder which attacks the internal rectus, and perhaps other muscles of the eye; and I can see no reason, although it may not be a usual law, why the corresponding muscles of each eye should not be simultaneously affected, especially when the disorder proceeds from functional derangement of the alimentary canal, or any other affection capable of disturbing the nervous system generally.

I have seen, as will appear by reference to the preceding parts of these communications, cases in which the internal recti have been simultaneously affected with paralysis, to the exclusion of the other muscles of the eye; why, therefore, may they not both be attacked with spasm at the same time?

Be this as it may, at all events, it sometimes happens when the defect is well marked, that the sympathetic influence it produces on the opposite eye, by long and active continuance, degenerates into a permanent shortening of the muscle, and a corresponding degree of contraction and thickening of the submuscular cellular tissue, similar in every respect to that of the primitively affected organ; so that it becomes requisite to liberate the secondarily-distorted eye also. If we neglect to do this, in the course of time, when the muscle first divided has formed a reunion with the sclerotica, a relapse of the original deformity may be induced in the eye that had been the subject of operation.

I am not aware that any person practised

the double operation previous to myself, which I first performed more than two months ago; nor do I believe that it has been generally recommended by any, but those surgeons who have had the opportunity of examining my cases. Such, however, has been the impression on these gentlemen, on seeing the perfection that may be thus obtained, that none have dissented from the propriety of the measure, and most of them have since adopted it whenever opportunity presented.

From the facts detailed in the former parts of this communication (Sept. 19 and 26), it is evident that the second eye cannot be operated upon in all cases with impunity. We have seen that when the second eye is thoroughly relieved, the external recti are apt to assume an ascendancy of power; and when the patient looks in the least outwards, to draw the eye so much to the external angle as to produce a very unpleasant leer, and at the same time to render vision double. But so long as any bond of union remains between the adductor of either side and the sclerotica, however slight it may be, this untoward event does not happen; from which we may infer, although difficult to suggest a satisfactory theory to account for the fact, that the mutually-controlling influence which proceeds from the intimate intercourse subsisting between the adductor branch of the third pair and the sixth nerve ceases, in some instances, when the physical restraint of the two muscles is overcome, by dividing the tendons of both.

In order to meet this difficulty, then, although unable to see in what manner the *adductor* of the right eye, for example, should exert any *physical* control over the *abductor* of the left, the nervous communication which influences their consentaneous movements remaining uninjured, it occurred to me, in performing the operation on the second eye, to avoid destroying *completely* the physical restraint by which it is held in bondage, and thus to preserve what appeared to be requisite to obviate the undue direction of the eye outwards, when the individual looked at an object placed at the side of him. I found the experiment successful; and out of more than sixty cases, I have never met with the same unfortunate result as that already recorded in the second portion of these communications.

In operating on the second eye, then, the great secret by which alone a fortunate and perfect result is ever to be secured, is to ascertain with the hook, before dividing the tendon, whether there exist any adventitious adhesions likely to steady the eye after the tendon is divided, and, if so, to carefully preserve a sufficient band of these to operate as a restraining power. If this be done, we shall find that the action of the abductor, that might otherwise have turned the pupil outwards, will just be sufficient to draw it to the centre of the orbit; and in all the consentaneous movements of the eye, this band will exert that restraint which is required to preserve a unity of action, and correspondence of the axes of the two organs.

Pathology of Strabismus Convergens.

From what has already been stated in various parts of the present and three last portions of this communication, very little remains to be said on this head. The views that I entertain must ere this be familiar to my readers: still it will be requisite to recapitulate them, in order to notice those of others, and to enable us better to understand the next part of our inquiry; viz., the *Causes of Relapse.*

From whatever remote causes the disorder may proceed, and these are numerous, being both functional and organic, the first immediate step towards the production of strabismus, is either spasmodic contraction, more or less permanent, of the adductor, and in some cases of the inner fibres of the superior and inferior recti, or loss of power in the abductor muscle. I have not met with a single case of congenital strabismus, though in many instances the deformity is reported to have supervened within a few days after birth. In by far the greater number of cases, for out of upwards of four hundred,* I have only

* It may be here requisite to state, by what concurrence of circumstances I have had the good fortune and practical advantage of examining so many cases of this disorder, from whence, indeed, I have collected the *material* for the present series of communications. After having operated upon between forty and fifty individuals in London, and assisted various of my professional brethren to an almost similar extent, I accidentally visited my friend, Dr. J. C. Williams, of Nottingham, who enjoys a high reputation and extensive practice as an oculist in that town, and for twenty miles round; as does also his cousin, Mr. J. Northon Thompson, as an ophthalmic surgeon. The operation being new in Nottingham, these gentlemen were desirous of seeing it performed. On mentioning to other surgeons of the town their intention of collecting together a few cases for operation, many of them expressed a wish to be present, and kindly used their exertions to provide patients. The consequence was, that in the course of a few hours cases presented themselves in incredible numbers; and during the three days I remained, Mr. Thompson and myself operated upon upwards of seventy. Ten days afterwards I revisited the town, to examine the result of our practice; and not only had an opportunity of repeating the same extraordinary surgical feat, but had the advantage of examining about one hundred and fifty cases that had been operated upon by my surgical friends during my absence. Mr. Thompson

seen three to the contrary, a contracted state of the inner muscle obtains. This, in the first instance, is a mere spasmodic condition of the part, and not by any means necessarily permanent; but it would seem it very soon becomes so. In which case the adductor muscle becomes shortened; and although capable of extension when the antagonist abductor acts, it still retains the eye turned somewhat inwards when the organ is quiescent. Should any inflammatory affection of the membranes of the eye supervene during the existence of this state of spasmodic contraction of the adductor, the submuscular cellular tissue is liable to be not only thickened, but rendered unyielding and adherent. When this change is established, even should the spasmodic condition of the muscle cease, the tendon will of course remain closely attached to the sclerotica, and be unable to resume its normal condition.

During the progress of this alteration in the character of the cellular tissue, as the eye is necessarily in motion, the opposite abductor being constantly called into action, the adhesions that take place between the sclerotica and the tendon of the adductor, and that would otherwise immovably fix the eye in the inner canthus, become gradually elongated into bands, in the same manner as the adhesions which take place between the pleuræ after pleuritis, become elongated by the constant action of the chest during respiration, or like those often met with, which unite the heart to the pericardium, and are the result of pericarditis. Now it is these bands of fibro-cellular connection passing between the sclerotic tunic and the under surface of the muscle and its sheath, that in such numerous instances retain the eye in an abnormal position, after the tendon has been divided, and render so many cases only partially successful. I have met with these bands very far back, even beyond the greatest diameter of the globe of the eye, and in two cases found them almost cartilaginous, and so unyielding that the patients were wholly unable to move the pupil out of the inner canthus.

When a case presents itself in which these bands exist, we often find that, after dividing the tendon, the pupil still turns somewhat inwards when the eye is quiescent; and that when the patient makes an effort to cause the two eyes to converge still further by directing them towards the inner canthus of each, being deprived of the power of doing so on one side by the division of the tendon, the effort is aided by the united action of the inner fibres of the superior and inferior rectus, and the pupil is, in consequence, drawn either diagonally upwards and inwards, or obliquely downwards and inwards; the direction which the eye takes in this respect being dependent on the comparative influence of these muscles and the site of the retaining force. A separation of this band usually liberates the eye, and completes the operation.

We are not, however, always to expect to find a fibrous interlacing of adhesions, such as I have just described, since this is the result of inflammation, and only to be met with in cases that have suffered from ophthalmia after the supervention of strabismus.

In most instances the contracted tendon is all that requires division; but should we find the contrary, and learn that the individual never suffered from membranous inflammation of the eye, a little examination with the hook will detect the cellular tissue thickened and contracted; this change in its texture having gradually supervened on the subjacent connecting membrane accommodating itself to the shortened state of the muscle and its tendon, and the new position of the eyeball. When either of these morbid alterations of texture is fairly established, we may rely upon it, that nothing short of their complete separation will effectually liberate the eye from bondage.

This I believe to be the true pathology of the disorder, from having so frequently encountered the obstacles just related, and being unable to detect them in the sound and dead eye. When we carefully examine the submuscular cellular tissue in the recent subject, if no strabismus existed during the lifetime of the individual, we find it to be so extremely delicate and yielding, as to convince us that it must undergo the changes here stated, otherwise it could never offer the resistance it often presents to the completion of the operation. Mr. Hocken, in some useful remarks on strabismus, published in the "Medical Gazette" for September 11, 1840, has stated it as his opinion, that strabismus often arises from *hypertrophy* of the adductor muscle, aided, perhaps, by *atrophy* of the abductor. Now, I am not prepared to assert that such a change in the development of the muscles of the eye never exists, though I do not believe it to be the general condition of the inner muscle in cases of this description. I can readily imagine with Mr. Hocken, that an increase of nervous influence, followed by hypertrophy, may attend the excessive employment of any

himself having relieved ninety-five. Before finally leaving Nottingham on this occasion, I visited my friend, Mr. Douglas Fox, of Derby, who likewise, aided by his professional brethren, had collected a larger number of persons than could be operated upon during my stay. Since my return to town, I have relieved, upon an average, three cases a-day. I now avail myself of the opportunity of cordially thanking the professional gentlemen in Nottingham and Derby for the very kind and hospitable manner in which they received me, and for the invaluable facilities they afforded me of obtaining practical information on the subject of this communication.

of the orbital muscles, whilst their antagonists may become atrophied from disease; and that in this manner we might easily account for strabismus originating in irritation (if it ever does arise from this cause), habit, improper education of the eyes, long retention of the head in one position, disparity of vision, opacities of the cornea, &c.

But, from the general history of the disorder in the vast majority of examples, we find that the obliquity invades suddenly, before any such change as hypertrophy can possibly be established. In some cases the disorder is intermittent, and gradually becomes permanent: in others, it would appear to be confirmed from the first.

Were simple hypertrophy of the muscle the common cause, then cutting the muscle across would, in every case, liberate the eye; but those who operate extensively will find this far from being the case. Severing the muscle, in a great many instances, is only a small part of the operation.

Want of attention to this fact, I again repeat, is the main reason why we see so many persons only partially relieved.

If the bands to which I have so often alluded are left undetached, they form the groundwork of a relapse of the distortion, by detaining the globe still tethered, until the cut tendon has time to form a new union with the sclerotica.

Causes of Relapse.

A sufficient length of time has not elapsed since the cure of strabismus by surgical means has been practised, to enable us to estimate the proportion of permanent success with which it is likely to be attended. When the operation is thoroughly performed, however, and only one eye has been originally affected, there does not appear much probability of any renewal of the disorder.

The morbid consentaneous influence that might, in the course of time, have involved the second eye, being no longer in operation, the temporary obliquity it derived from this source will soon subside, and both eyes remain sound; but if it shall be found that both eyes were primitively affected by the same exciting cause,* or that the disorder, which was at first only sympathetic in the second eye, has become permanent, then it is possible, even after operation, when a reunion has taken place between the divided ends of the tendon and the sclerotic coat, that the eye which was the subject of operation may in turn become again sympathetically implicated, though, I should imagine, never to so great an extent as previously.

Relapse in such case being evidently dependent on the circumstance of both eyes having become permanently affected previous to operation, the proclivity to this event will, of course, be in proportion to the degree in which the unliberated eye remains implicated.

Even although no union should ever again take place between the divided muscle and globe of the eye, still, I conceive it quite possible that the other muscles being under the influence of the same consent or sympathy already alluded to as subsisting between the eyes, in order, when practicable, to render vision with a double organ a single function, might be gradually involved in a conjoint morbid performance of their duties, and by the force of involuntary practice might ultimately so accommodate themselves as to perform functions for which they were not originally destined.

Another source of relapse of a much more simple nature, though by no means of frequent occurrence, is the contraction of the new or substituted parts at the inner canthus of the eye during cicatrisation, when the conjunctival folds and loose cellular tissue have been unnecessarily removed. A few days ago I remedied a relapse of this description, by again freely dividing these; the eye was instantly restored to its proper situation.

The possibility of cicatrisation again limiting the movements of the eye, though a rare occurrence, is another, but, perhaps, as it can be easily obviated, a trifling objection to unnecessarily destroying any of the outer coverings or appendages of the eye.

When strabismus arises from any defect of vision in one eye, and the distortion has been produced by the efforts of the patient to accommodate the faulty axis of the diseased eye, we may expect, as the strabismus is in such case a resource of nature to obviate the difficulty, that as soon as a reunion takes place between the divided tendon and the sclerotica, and the muscle is again free to act, the original efforts will be renewed, and the obliquity recur. For the most part strabismus is the cause of defective vision, and on its removal the sight improves. When, therefore, we find the converse of this fact, and the patient complains that his vision is in consequence become more confused, we have reason to apprehend, if the previous history of the case confirm the opinion, that we have operated on an example of the above description, and that a relapse may ultimately occur.

Fortunately, on the re-establishment of strabismus, an event very likely to occur under such circumstances, the vision will be restored to its former condition; inquiries, then, of this description should be very carefully instituted before the operation can be recommended. In fact, the proclivity to relapse will very much depend, in numerous instances, on the nature of the remote cause, and on the probability of its persistence after the eye has been set at liberty. From

* Presuming that both eyes may be simultaneously affected.

what I have seen, however, I do not imagine that relapses will be of frequent occurrence; on the contrary, I am of opinion they will be very rare. Several cases of alleged relapse that have been shown me, were not returns of the affection, but only imperfectly-performed operations, or the result of mere sympathetic connection with the other eye. A few of these cases I have myself since remedied by operating on the second eye, which had erroneously been regarded as not implicated, on the principle, that "squinting never affects both eyes simultaneously."

Mr. Elliott, of Carlisle, I perceive by last week's LANCET, has been led to practise the same proceeding, and very judiciously entitles his communication "division of both internal recti in squinting, in preference to that of any other muscle, when the division of one adductor only is not instantly and completely successful." The difference between Mr. Elliot's practice and my own is, that I allow a little time, three weeks or so, to elapse between the operations, not only to afford the eye, presumed to be unaffected, the opportunity of correcting its obliquity, and thus to satisfactorily decide the question, whether it be itself really implicated or not, but also to enable the muscle first divided, time to form a new insertion into the sclerotica. If this latter direction be not attended to, it will be found that one or both eyes will often turn unduly outwards, when the abductors are called into contraction.

During the interval between the two operations, as soon as ever the patient can bear to use his eye, and this he can generally do within twenty-four or thirty-six hours after the tendon has been divided, it is desirable to place a soft compress of lint and a bandage over the *sound* eye, to prevent its morbid movements from influencing the one that has been the subject of operation. If we neglect this precaution, it is possible that the divided tendon may form a second attachment too near its former insertion, the eye being inclined unduly inwards during this period. When the sound eye, however, is covered over in the manner suggested, the one that has been liberated preserves its proper position in the centre of the orbit, and the reunion between the cut tendon and sclerotic tunic takes place considerably posterior to the original site, as the muscle, it may be presumed, shrinks in some trifling degree when set at liberty.

On the Operation of Strabismus Convergens.

On this subject I have very little to say, that has not already been stated in the preceding portions of this communication.

The operation I perform is that suggested by Mr. Bennett Lucas, and which I believe to be decidedly the best in every respect.

When it is requisite to keep the eyelids separate by any mechanical means, I employ the double speculum proposed by my friend, Mr. John Northon Thompson, of Nottingham, and which, with his permission, is here represented.

It is the best instrument of the kind I have seen, and has the advantage of enabling us to hold the eyelids open in spite of every spasmodic effort to close them, without creating any pain. It has the farther advantage of enabling us to get at the eye freely, the hands of the assistant being very far removed from the site of the operation. I cannot imagine the necessity of putting the patient to the pain of depressing the lower eyelid by means of artery-forceps, as recommended by some surgeons; neither have I ever found it necessary to fix the globe of the eye by means of a sharp hook.

The patient is desired to direct his eye outwards, the conjunctiva is then to be pinched up by means of a fine forceps, and cut across with a pair of strong scissors nearly midway between the edge of the cornea and the semilunar fold of the membrane. This opening should be made freely, and care taken in making it to completely divide the subconjunctival loose cellular tissue, so as to fairly expose the tendon from its upper to its lower margin.

The blunt hook is then to be inserted under

it, so that, when raised and drawn to the external opening, a small portion may be snipped out of it. Should the pupil, when this is done, be found not to occupy its proper situation, the hook should be introduced again, and any bands of fibro-cellular tissue that still fix the eyeball should be brought to the external opening in the same manner as the tendon, and divided, this being repeated till it is perfectly liberated. The only point in the operation that requires more precise instruction, is the direction in which the blunt hook should be introduced, and the manner in which it should be made to gently sweep the sclerotica in search of adhesions. This is the grand step in which most surgeons in their early operations fail; they generally introduce the hook by holding it at a right angle with the eye, its concavity looking upwards, and thus almost invariably miss inserting it under the tendon, whereas, if introduced by holding it almost parallel with the eye, the point being directed downwards, as represented in the woodcut, until it reach the inferior margin of the tendon, and then the handle be turned carefully upon its axis, and the hook next swept gently over that portion of the sclerotica which it is necessary to clear, no difficulty will ever be experienced in passing it under the tendon, or anything else that it may be requisite to divide.

After its point is turned upwards, all that requires attention is to keep the flat* side of the instrument towards the eyeball and its extremity in gentle contact with the sclerotica, taking care to make it emerge through the external wound, by keeping the handle well depressed, and causing it to obliquely cross the nose. I have seen a great many operators at first thrust the extremity of the hook directly against the globe of the eye, and some, I am informed, have actually pushed it through the sclerotic coat, and allowed the humours to escape; whilst almost every one, from want of attention to the last direction, that of making the handle obliquely to cross the nose, catches its extremity under the superior tarsal cartilage, from whence only, after numerous ineffectual efforts, they finally disentangle it.

Treatment after the Operation.

If the operation be performed neatly, and with address, no more of the conjunctiva being cut or displaced than is necessary for the purpose of cutting the tendon, little or nothing requires to be done afterwards. A fold or two of lint, moistened with cold water, may be applied over the closed eyelid, and retained there for a few hours, to obviate, as much as possible, ecchymosis, and prevent inflammation; which latter, however, very rarely supervenes, although the ecchymosis is sometimes considerable, especially if the conjunctival tunic have been unnecessarily raised, so as to allow of infiltration of blood into the cellular tissue under it. On the second day we shall find a considerable deposition of lymph from the subconjunctival membrane, uniting the cut edge of the conjunctiva, and be led, perhaps, from its abundance to expect that a tumefied cicatrix will result; but such is seldom the case. In the course of a short time this deposition gradually disappears, and along with it the ecchymosis.

In order to hasten both these results, we may recommend, after the third or fourth day, a slightly astringent or stimulating solution to be dropped into the eye twice or thrice a-day. From two to six or eight grains of sulph. zinci, dissolved in rose-water, answers very well for this purpose. When the conjunctiva has been inadvertently cut away, the reparative process is often very tedious, and the cicatrisation is retarded by the exuberant growth of mushroom-like granulations. These may be removed by the daily use of sulphate of copper, or, what is much better and far less painful, we may allow them to grow till they are large enough to be cut away, and then remove them by means of fine forceps and scissors. They often bleed freely, but their removal, as they are very insensible, is unattended with pain. I used to apply blue stone to hasten the disappearance of the reparative lymph, but I found that the irritation it created kept up the turgescence of the blood vessels, and rather retarded than hastened the desired absorption.

The majority of cases are perfectly cured, by this plan of treatment, in the course of a fortnight or three weeks; and during this period never suffer any inconvenience, beyond that which arises from ecchymosis, the eye looking bloodshot, turgid, and glistening.

Very often, during the performance of the operation, when the tendon is being divided, the patient complains of pain in the forehead, similar in degree and kind to what would be produced by pressing the finger very firmly on the part. This uneasiness sometimes remains for several hours afterwards, and is best relieved by warm fomentations. In a few instances I have found the same sort of sympathy to be excited in the stomach as frequently supervenes after couching, and the patient has been troubled with vomiting for twelve hours after division of the tendon. When this symptom happens we generally find, on inquiry, that the patient has experienced similar attacks of vomiting from trifling causes on former occasions, and is, at times, the victim of the ordinary forms of hysteria. Under these circumstances, effervescing salines or opiates may be tried, but they have no. in my practice been of much use; the latter remedy has generally aggravated the distress by occasioning vertigo or headach, without relieving the symptom for

* The hook I use is a blunt-ended, *flat* hook.

which it was administered. Indeed, temporary confusion or giddiness, of a few hours' duration, is no uncommon occurrence after the operation, without the assistance of the narcotic. Time and tranquillity appear to me to be the best remedies; these annoying symptoms usually ceasing after the first night's rest, and being, in the mean time, much mitigated by keeping the patient quiet, and in a dark room, or covering the eye from the light of day.

Should membranous inflammation supervene, it must, of course, be treated by bloodletting, leeches, warm fomentations, active purgatives, and the other ordinary means proper for simple inflammation of the texture affected.

14, Langham-place, Regent-street.
Sept. 24, 1840.

While correcting the press, I may just notice that I have this day performed some experiments on a dog to ascertain the functions of the oblique muscles, which it is my intention to make known next week. In the mean time I may state, that I do not believe any one has divided either of these muscles in the living body, and until the result of my experiments is published, I would not advise any one to attempt the operation as a cure for strabismus of any kind.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

Glasgow, Thursday, Sept. 17.

(Continued from p. 40.)

Dr. PERRY read a valuable paper, "on the diffusion of contagious fevers, and on the laws that govern them." The paper was accompanied by statistical tables, compiled from several thousand cases, from which many valuable deductions were drawn. Dr. Perry denied that the enormous proportion of fever cases, occurring in Glasgow, depended on any circumstances of situation, air, or filthiness, in the town itself, but was owing to the diffusion of the contagion by the hordes of Irish and Highland emigrants. A large portion of the paper was devoted to the analogy between typhus and the acknowledged exanthematous diseases, viz., variola, rubeola, and scarlatina. This analogy he insisted on in the following particulars:—1st, It is generated by a morbid animal poison, which, once introduced, cannot be checked by any treatment; 2nd, That it runs a definite course, terminating by a certain fixed period; 3rd, That an individual once suffering from it, enjoys an immunity afterwards; 4th, That no other morbid poison can coexist with it; and, 5th, That it is accompanied by a peculiar characteristic eruption. This eruption, he said, was frequently confounded with petechiæ, fleabites, sudamina, &c., which occur accidentally in fever.

In its first appearance it is of a dull-reddish or rose colour, in the form of irregular spots; often slightly elevated, and felt by passing the hand lightly over them, but not acuminated. They can be easily made to disappear by pressure. They are unaccompanied by itching, are sometimes distinct, and occasionally so crowded as to give the skin a mottled or measelly appearance. It never becomes vesicular, and is sometimes so partial in its appearance, as to be readily overlooked by a careless observer. After a few days its colour fades, and it becomes of a dusky hue, like freckles, for which it might be mistaken. In bad cases of typhus it may assume a livid hue, and is then with difficulty distinguished from purpura.

The contagious nature of the disease was amply proved from the numerous cases; and the management of the sick and convalescent, so as to prevent its diffusion, laid down. The paper concluded with some excellent hygienic regulations, which, under an efficient system of medical police, would be highly conducive to the prevention of this species of fever.

The section adjourned at two o'clock.

Friday, September 18.

Dr. MAKAY read a paper on the preparations of the Matias bark, the subject which he brought before the section last year. Dr. Makay exhibited drawings of, and read an anatomical description of a monocephalic double monster; it was the offspring of a Negress residing near Maracaibo, in South America; it appeared to be born about the seventh month of fœtal life, and was said to have lived several hours.

Dr. PATRICK NEWBIGGING, of Edinburgh, read a communication on the therapeutic effects of castor-oil in certain nervous disorders, in which he was desirous of showing that, independent of its well-known purgative property, the Croton oil possessed specific influence in epilepsy; and in the various forms of neuralgia, as in tic-douloureux, sciatica, &c. He was induced to form this opinion, in consequence of his experience of the treatment of such complaint, in his practice at the New Town Dispensary of Edinburgh, as well as in private practice. The author detailed some of the cases, more particularly of epilepsy, in which he had produced entire relief from that very grievous complaint, and mentioned especially one instance of a cure having been effected after the disease had existed upwards of twelve years. Dr. N. stated that he had remarked very decided benefit from this remedy in laryngismus stridulus, or crowing disease.

SIR CHARLES BELL expressed an opinion in the conversation which ensued, that this

medicine is efficacious in those neuralgic affections when seated in the face, but will fail in those seated in the extremities, unless accompanied by some symptom manifesting cerebral disease.

Dr. ABERCROMBIE bore testimony to its utility in affections of the brain from long experience of it, and mentioned a remedy which he found very serviceable in laryngismus stridulus, viz., a combination of carbonate of iron and rhubarb with musk.

Dr. LAWRIE read a most elaborate paper "on the results of amputation." In which the results of all the cases which had occurred in the Glasgow Infirmary for many years were stated, and all the great questions connected with amputation were ably discussed in connection with those results which were drawn from tables in which the operations were classified according to the sex of the patients; the cause of operation, whether disease or accident; the limb operated on, whether primary or secondary, &c. &c. The following are some of the results obtained. Out of 276 cases, 176 recovered, 100 died; 216 were males, 60 females, 153 were for previously existing disease, 123 for injuries. One case of operation at the hip-joint occurred, which recovered. Generally speaking, secondary amputations were preferred, and immediate dressings approved of. The causes of death in the fatal cases were classified, and were frequently found to depend on visceral disease.

From the importance of the subject and the value of the communication, the section recommended its immediate publication *in extenso*.

Dr. JOHN REID read a paper "on the anatomical relations between the mother and fœtus (human)." The subject was illustrated by diagrams on a large scale, and *demonstrated* by preparations in a natural and an injected state. The tufts of placental vessels were shown to penetrate the decidua, and enter the open mouths of the uterine sinuses. These tufts were shown to consist of an artery and vein terminating in a blunt point, and continuous. A number of these, not bound together by cellular tissue, forming each tuft, which was continually immersed in the maternal blood, poured into the sinuses by the tortuous uterine arteries, whose lining membrane expanded into the sinuses, and was continuous with the uterine veins; after being reflected on the tufts of the placental vessels, forming, in fact, sheaths for them, these tufts resembling the branchial vessels of aquatic animals, covered by a prolongation of the inner coat of the vascular system of the mother.

Dr. REID communicated a paper on the physiological action of Bromine and its compounds by Dr. Glover.

Saturday, September 19.

Dr. WATSON in the chair.

Dr. R. D. THOMSON read a paper "on opacity of the cornea, produced by sulphuric acid." The principal object of which was to prove that the opacity produced by the application of the acid consisted of *a false membrane*, external to the transparent layers of which the cornea in a state of health consists, which may retain their transparency after the external injury has been inflicted; and that this false membrane may be removed by operation, leaving the exterior coat (the conjunctival) free from any permanent effect capable of destroying vision. The paper was illustrated by preparations and experiments on the eyes of lower animals, demonstrating the membrane and the transparency of the layers immediately beneath it, when removed.

Mr. DOUGLAS read a paper "on dislocations of the ankle-joint, backward and forward." Cases which came under the author's notice were detailed; casts and preparations of the parts illustrated the descriptions.

The following are the more remarkable appearances in a case of dislocation of the tibia forwards. The ankle was extended, and quite stiff; tibia advanced three-quarters of an inch; the anterior edge being exactly over the articulation of the astragalus with the os naviculare. The tendon of the tibialis anticus was in a straight line with its insertion. Behind, the astragalus projects so much that the flexor longus pollicis does not run in its groove in the tibia at all. The astragalus and os calcis are in their proper relation to each other, and their posterior ligament is entire. Additional ossification took place at the back of the tibia, close above the astragalus. The external malleolus remained perpendicular in its situation, with its three tibulo-tarsal ligaments entire. A hollow ran obliquely upwards and backwards, from its anterior edge, showing where a fracture had taken place, the superior anterior portion having been thrown forward with the tibia. Internally the deltoid ligament seemed to have been ruptured.

A case of fracture of both bones close to the malleoli, which simulated luxation backwards of the tibia, was detailed.

Mr. Douglas presented to the section, for their examination, a frontal bone which had been trephined; the removed portion of bone was *completely* repaired, in both tables of the skull: about twenty-six years had elapsed between the operation and the death of the individual.

The Secretary read a report of a few cases communicated by Sir DAVID DICKSON, and some observations on the vital statistics of Scarborough, received from Mr. Dunn, when the section adjourned.

Monday, September 21.

Dr. Watson in the chair.

The Secretary read a report, by Dr. Charles Williams, "on the physiology of the lungs and bronchi." The author confined his attention, in his investigation, to ascertain the existence of contractility and sensibility in the air-tubes and lungs, omitting the chemical processes supposed to be effected in respiration, as also the vital effects of the interruption of that function.

On the subject examined, there exists the most contradictory opinions amongst physiologists of the highest reputation.

Dr. Williams detailed in his report the numerous experiments by which he arrived at the following conclusions:—

That the air-tubes *are* endowed with irritable contractility, excitable by electric, chemical, and mechanical stimuli, and probably they possess also tonic contractility; that this contractility is manifested in all portions of the air-tubes, it does not appear to exist in the vesicular terminations of the air-tubes; that this contractility resembles that of the intestines or arteries more than that of the voluntary muscles, the œsophagus, or heart; that contractility of the air-tubes seems to be much influenced by the cause of death—when death was produced by narcotics injected into the veins it was very much diminished, with the exception of hydrocyanic acid, which did not impair it; that the bronchial fibres seem to be more excited by direct stimulation, than by any influence conveyed through the mucus of the lungs—for mechanical and galvanic irritation of the vagi nerves had no effect on them; and passing a current through the nerves to the lungs caused much less contraction than passing it through the trachæa.

The above are amongst the more interesting of the conclusions of the report, for which the thanks of the section were voted to Dr. Williams.

Dr. Sym read a paper, "on the physiology of the organ of hearing," which, from the minute character of its investigation, by observation, experiment, and calculation, defies analysis. Many of its results were directly opposed to the received doctrines. The section requested its immediate publication, as a valuable addition to physiological science.

Dr. John Reid read a paper, "on the manner in which vital actions become suspended in asphyxia." The impediment to the circulation through the lungs, he concluded from his experiments, arose neither from the suspension of the mechanical motions of the chest, nor from the venous blood destroying the contractility of the heart; but from the difficulty of transmitting the venous blood through the capillaries of the lungs, when the chemical changes have been arrested. The failure of sensibility, he concluded, arises from the accumulation of venous blood in the vessels of the brain.

Mr. George Glover detailed some cases of the lodgment of foreign bodies in the pharynx; one of them was *a padlock*, which, after being lodged several weeks, was rejected from its situation during a severe fit of vomiting.

Some cases of cure of squinting, with observations, and a table showing results, were communicated by Mr. Ure.

Dr. Henry Lonsdale, of Edinburgh, presented to the section two examples of bony structure, developed without being derived from bone or periosteum. He hoped that such specimens would tend to counteract the exclusive opinions entertained by some on the subject of ossification.

Tuesday, September 22.

Dr. C. W. Bell communicated a paper, giving a brief notice of Bouten and Aleppo, or Baghdad boil, in the East. The peculiarity of this ulcerative disease he stated to be, that its two species last precisely, the one twelve months, called the male; the other six months, called the female. It commences by a small pimple, which becomes covered with a slight crust. This is continually renewed, becoming larger at each succession, secreting pus, and being finally covered by a prominent conical scab. It resembles rupia, of venereal origin, for which it has been frequently mistaken. No treatment hastens its progress; but all cases terminate at six or twelve months, whether treated or not, leaving unsightly cicatrices on the face; the disease never occurs twice in the same person. There is little constitutional affection, and it is not contagious. It is attributed by the Arabs to eating dates, but erroneously.

In a short paper, Dr. Cormack denied the truth of Sir Charles Bell's theory of the cause of death when air is introduced into the veins. He stated that it required a very large portion of air to be injected into the veins to cause death, and that when it did take place, the right cavities of the heart were found distended so much that this distension must be looked on as the efficient cause of death, and not any effect on the respiratory tract of the medulla oblongata, as stated by Sir Charles Bell. Dr. C. made some observations on the diseases most frequently occurring in Tangier in Barbary. The most common were elephantiasis, dropsies of various forms, and intermittent fevers; typhus he stated to be of rare occurrence. Cholera, on its appearance, confined its ravages almost entirely to the native population, of whom 567 (out of a population of 5500) died in a few months, whilst only

three Europeans died, although there were 300 in the town.

Dr. JOHN REID gave some demonstrations (from drawings and preparations) of the minute anatomy of the medulla oblongata. His object was to show the relations of the motor and sensitive columns of the spinal marrow, as they pass through the medulla oblongata, and to show the attachment of the corresponding nerves. The presence of the dissections would be absolutely necessary to elucidate his statements. They fully bore out the opinions of Sir C. Bell on this subject.

Dr. Reid also communicated the results of some experiments instituted to determine whether the contractility of a muscle which has been exhausted by galvanism will be restored, *although all nervous communication be cut off*. A former communication to the Association proved the affirmative in regard to cold-blooded animals: and the result of his experiments amply proved the same fact with regard to warm-blooded animals. He pointed out sources of fallacy in Müller's experiments, from which he was led to reject the doctrines of Haller on this subject.

The PRESIDENT informed the Secretary that the Committee of Recommendation had adopted the application of the Secretary for a grant of money for the purpose of bringing over to this country Alexis St. Martin, in order to have a well-directed series of experiments made on the subject of digestion. £200 was "recommended," and a committee appointed; he did not state whom it was composed of.

Professor ALLEN THOMSON gave a demonstration of the late anatomical researches, particularly the continental, on the glands of the gastro-intestinal mucous membrane, illustrated by very numerous preparations, and magnified views of the microscopic facts.

Dr. PERRY read a paper on inflammations and deposits of pus, particularly occurring after fever.

Dr. HANNAY communicated a few remarks on pertussis, in which he strongly recommended rubbing the chest with cold water until reaction and rubefaction took place.

The SECRETARY read a few observations on madness, called a paper on mnemonics.

FEES AT THE WESTMINSTER HOSPITAL.—*To the Editor.*—Sir: The medical officers of the Westminster Hospital request you to be kind enough to add to their prospectus, that pupils are enabled to enter to the Surgical and Medical Practice, conjointly, for the period required by the Royal College of Surgeons and Company of Apothecaries, for the sum of Twenty-six Guineas. I am, Sir, your obedient servant, B. W. HOLT,

Sept. 29, 1840. House Surgeon.

THE LANCET.

London, Saturday, October 3, 1840.

AT the urgent request of very many of our correspondents, we are induced, at this early period, to declare our opinion on the Medical Reform Bill of Mr. WARBURTON. The number of letters which we have received on this subject is extraordinarily large; and no better evidence can be offered of the lively, deep, and increasing interest which is felt amongst all ranks and classes of the profession, on the great national question of medical reform,—ready to burst forth in some display, which must exhibit, in a very marked manner, the character, feelings, and determination of the medical body in this country. But we would intreat of medical reformers to proceed at this juncture with the utmost deliberation and caution. The monopolists are on the watch; they are silent in public, but in private they do not hesitate to express their delight and gratification at the provisions of the new Bill. Mr. WARBURTON certainly did not intend so to construct the Bill that it should work advantageously to such notorious delinquents; nevertheless, the framework of the new measure is well suited to their pernicious views and unjust practices. With regard to our own opinions of the Bill, we confess, frankly and unhesitatingly, that our very worst anticipations are verified; and in this place we shall quote the concluding paragraphs of the Preface of the present volume of THE LANCET, written last week, previously to our being put in possession of a copy of the measure:—

"But in submitting their views to Parliament, it must be confessed that the medical reformers labour under one pressing difficulty, and, in that respect, occupy a very unfavourable position. In 1833, a Select Committee of the House of Commons was appointed for the purpose of inquiring into the state of medical education and practice. The evidence elicited before

that committee, exhibited an odious and most hideous picture of monopoly, misgovernment, avarice, and injustice. 'What, 'then!' it may be asked, 'Can we trust the 'medical body with the management of its 'own affairs? Ought the Legislature to be-'stow new powers on the members of a pro-'fession which has thus acted?' It is to be feared that many persons would be disposed to answer this question in the negative. But how unjust it would be to infer, from the proceedings of some of the worst and most obnoxious, self-perpetuating monopolies that ever existed, what would be the conduct of a governing body that must be elected by *the unshackled choice of the whole profession*, and removable, wholly or in part, once in every twelve months? Is it fair or just to imagine that there *could* be any resemblance between the conduct of a governing assembly *so constituted*, and the uniform career of sordid, corrupt, and irresponsible monopolists?

"We hold, then, that the great body of the profession should continue to contend, and lustily too, for the RIGHT of the principles of SELF-GOVERNMENT, by means of a pure and efficient system of representation in the controlling authority. The conduct of the vile corruptionists ought not, and must not, be employed as a means of inflicting permanent injury and degradation on the profession; and should the Legislature allow the atrocities of the medical corporations, imperfectly and foully constituted as they are, to be the cause of introducing niggardly and unjust restraints into an elective system of medical government, it will reflect on the character and discrimination of Parliament a permanent and just disgrace."

Alas! It is now but too evident that our apprehensions were well founded, and that Mr. WARBURTON has formed his opinion of the character of the immense body of English medical practitioners, *from his acquaintance with the conduct of the incorporated monopolists*. Hence the provisions of his Bill. Hence the proposed interference of *the government* with the new college. Hence the proposed introduction of *lay-men* into the councils and senate. Hence the proposed control of the college funds by *the government*. Hence all the other pernicious *restrictions* of the Bill. Hence the absence of any provision for the exercise of that just power in medical polity which *ought* to be exercised, and which could and would be exercised, for the benefit of the public, by a governing authority *faithfully and honestly reflected, and representing the opinions, the interests, and the intellect of the medical profession of this great country*.

We are, then, decidedly and unequivocally hostile to the new measure. It is unsuited to the wants of the profession. It is not in conformity with the demands of the Medical Reformers. It is not in unison with the genius of the times in which we live. It would not add dignity or grace to the profession of medicine. On the contrary, by conferring a legal stamp upon, and by its recognition of, the powers which some of the monopolists now exercise, the Bill, in operation as a statute of the land, would tend to perpetuate an authority which the profession has long repudiated as *odious, detestable*, and *insufferable*. We entertain the strongest feelings of esteem and respect for the abilities and integrity of Mr. WARBURTON, but we are now fully satisfied that that gentleman has either altogether mistaken the views of Medical Reformers, or has formed his opinion of the worth of the members of the medical profession generally, *by the demerits and misconduct of the members of the disreputable medical corporations*.

We do not believe that the Bill of Mr. WARBURTON will be read a second time in the House of Commons.

(*From a Correspondent.*)

THE BRITISH MEDICAL ASSOCIATION will meet at EXETER HALL on Thursday next, October 8th, when Medical Reformers should attend there in full force. Never was there a time when more judgment, decision, and energy were demanded in relation to the question of medical reform, which, instead of being simplified and straightened by Mr. WARBURTON, has been complicated, and rendered a labyrinth of troubles and imprisonment for medical interests and

science. After many years of laborious incubration, Mr. WARBURTON has produced a Bill which Medical Reformers declare, with one voice, that they cannot accept. Nay, we are assured that the Bill, analysed in the last LANCET, has produced a burst of indignation in the profession, from Southampton to Newcastle, from Essex to Ireland. Mr. WARBURTON had before him, and examined with the persevering assiduity of his character, the officers and instruments of corruption in the Medical Corporations. The commission on the *Municipal* Corporations, comprising among its members the just, right-minded, and discriminating ABERCROMBIE, came to the conclusion, after similar disclaimers, not that all the citizens of England were corrupt and unfit to be trusted, but that the principle of irresponsibility was vicious, and that secrecy and self-election corrupted minds that were originally unperverted. Mr. WARBURTON, on the contrary, has blindly abandoned himself to an undiscriminating distrust of the medical practitioners of the United Kingdom, and he evidently views them very much in the light of a band of felons.

No man who has perused the analysis of the Bill can fail to perceive that, as was apparently foreseen in THE LANCET of last week, Mr. WARBURTON has measured the oppressed and suffering profession by the standard of those unjust and corrupt stewards from whose tyranny and dishonesty they are universally seeking to be relieved. It is to be hoped that the approaching meeting at Exeter Hall will be attended as fully as the importance of the questions before it demands.

No complaints are commoner in the profession than those which are made against the impudence of quacks, with their paragraphs and advertisements, in newspapers and hand-bills. The evils of quackery, however, still withstand both the condemnatory voice of reason and such exquisite ridicule as they met with from GOLDSMITH in his Chinese Letters, for ignorance and credulity have been but little abated these fifty years, in some ranks of society. The remedy, in fact, has been intrusted to an increase in the wisdom and good sense of the people, and in many respects has failed. Yet to *legislate* on this subject is difficult; for quackery assumes so many forms, and is so very ingenious in its shapes, and artful in its "dodges," that to lay hold of it by the law can never be rendered an easy task. It would be difficult to frame indictments, for instance, for the crimination of offenders who could slip through the net upon such apologies as those supplied by Dr. FRANZ; or of all that long tribe who recommend, *with their full names and addresses*, the spectacles of SOLOMONS and Co., the clyster pipes of SCOTT and Co., HOLLOWAY'S ointment, FRANKS'S clap medicine, and so on. What sort of a bill could be drawn to embrace such specific offences as the following puffs in the advertising columns of the *Morning Post* of Aug. 13, and the *Morning Herald* of Sept. 12?—

"On the Cure of Squinting, by the Division of one of the *Straight Muscles* of the Eye, &c., being the Half-yearly Report laid before the Governors of the Royal Westminster Ophthalmic Hospital, at their general meeting on the 25th July. Third edition. By C. W. Guthrie, Esq., Jun., Assistant-Surgeon to the Hospital, and Demonstrator of Anatomy to the Charing-cross Hospital, &c.

"Ordered to be printed and published, price 1s, by J. Churchill, Princes-street, Soho; W. Sams, St. James's-street; and J. Mitchell, 33, Old Bond-street.

"The poor in London are received on their own application without letters of recommendation, and those in the country requiring operation will be received after a previous application of the clergyman or duly-constituted authorities of the place to the Secretary.

"By order,

"THOS. R. FOWLER, R.N., Secretary."

"ROYAL FREE HOSPITAL, GREVILLE-STREET.—Mr. John Gay, one of the surgeons in daily attendance upon this most excellent institution, has recently performed some very *extraordinary cures* of club-feet. The operation is performed by slightly wounding the tendon of Achilles, and cutting through other important muscles of the foot. In every case success has attended the efforts of the surgeon, and the patient has generally recovered within eighteen or twenty days. There are at this time several patients in the hospital, upon whom this interesting operation has been performed, and, much to the credit of the hospital, are doing well."

"By order," says Mr. T. R. Fowler, Royal Navy. By order *of whom*? Of whom, but of C. W. GUTHRIE, Esq. Jun.? The indictment to lay that, would be a troublesome affair to any special pleader. Yet what juryman of common sense would fail to detect "all about it" in a moment, and at the same time to feel how disreputable and worthy of punishment it was to degrade a charitable medical institution to the purposes of common quackery? In the case of C. W. GUTHRIE, Esq., Jun., there might be a mitigation of circumstances pleaded, paternally. "Train up a child in the way he should go," says the revered text, and when he is old he will *follow your example*. No one has a better right to set his child *a going* than the father thereof. Upon the whole, those correspondents who so often draw our attention to these advertisements of the *regular* as distinguished from the *irregular* quacks, must be content to leave the abatement of this species of advertisement to the ultimate penetration and good taste of that portion of the community on whom it is chiefly designed to operate.

OXENSTIERN is said to have bidden his son observe with what a very small amount of wisdom nations were governed. The Swedish chancellor probably never had any experience of parochial wisdom. The infinitessimal fragments of that quality existing in many of our Vestries and Boards would have excited his wonder to the highest pitch; and his son would have admired the movements of certain knots of parish rulers, as much as a collection of importunate animalcules is admired, wriggling, swelling, writhing, fighting, squabbling, devouring, under the solar microscope. The exhibition at the St. Marylebone workhouse, a week or two ago, afforded a remarkable specimen of parish wisdom; and if the Polytechnic Institution, or the Adelaide Gallery, should be slack of curiosities in the gloomy days of autumn, they cannot do better than speculate on Mr. JOSEPH and his colleagues for the season.

It is well known to everybody that small-pox has latterly prevailed with great violence; that thousands of British children have perished through the sheer neglect of vaccination; and that the Legislature, in the last session of Parliament, passed an Act for the extension of Vaccination—imperfect, it is true—and committed to the administration of unworthy hands, but still capable, if properly carried out, of conferring great benefits upon the poor. One would have thought that every parish politician, guardian, director, overseer, or vestryman, would have been eager to carry out the intentions of the Legislature; and to express a kindly sympathy for the poor children whom they were called upon to succour, by the application of JENNER's beneficent discovery. But we see nothing of this in the exhibition at the St. Marylebone workhouse. Mr. JOSEPH was in the chair; and he is reported in the "Times" to have said—

"That Board had expressed their opinion that, with the assistance of the two out-door surgeons, the medical staff of the parish were quite competent to carry out effectively the principles of the *Vaccination Act, without any additional burden being imposed upon the poor-rate*. A committee had been appointed to carry that resolution into effect, and he would suggest that the receipt of the papers be acknowledged, and a copy of their resolution sent to the Poor-law Commissioners."

Mr. JOSEPH further observed, that "no "specific time was appointed for the Act "coming into operation." He was evidently in no hurry.

The Board has acted in direct contravention of the law; and the parishioners of St. Marylebone will be indebted to its stolid proceedings for the humiliating position in which the parish is placed. The Poor-law Commissioners, with the Act in their hands, will place their heel upon Mr. JOSEPH. In what manner, he shall be left for the present to guess.

Our readers may scarcely credit the statement, but it is a fact, that an "examination" of the body, the *outside* of the body—to speak vulgarly, as the whole uncivilised proceeding befits—was actually made at the inquest in Nassau-street, Dublin, upon the carcase of Elizabeth Lynch, on the 7th of September, by *a surgeon*, standing on a chair, *while the said carcase was hanging by the neck!* The letter of Dr. Corrigan, quoted in The Lancet of Sept. 19, immediately afterwards produced an inquiry, at the College-street Police-office, into the proceedings at the inquest, before a magistrate, Mr. Gabett, when, amongst other questions and replies, the following are reported in *Saunders's Journal* of Sept. 15:—

Dr. Corrigan.—Surgeon Browne says that he made an examination of the chest and back of the woman. How could he have done so, sufficiently, without removing her clothes?

Surgeon Browne.—I can only say that the POSITION THE BODY WAS IN WAS THE MOST CONVENIENT *that I could have had it in.*

Dr. Corrigan.—Were the clothes removed? That is the question.

Surgeon Browne.—NO.

We have received a letter on the subject of this inquiry from Dr. Brady, the lecturer on medical jurisprudence, in Dublin, but at too late an hour for insertion this week. But as it briefly discusses some points of interest in the inquiry to medical jurists, it shall have a place in the next Lancet.

MEDICAL SOCIETY OF LONDON.

Monday, September 28, 1840.

Dr. Clutterbuck, President.

This was the first meeting of the Society for the session; there was a large attendance of members and visitors. The President, on taking the chair, made a brief address to the members on the advantages of union in medical labour. Medicine, he remarked, was a science at present in a very imperfect state, and would probably never be perfect. The labours of one man in so vast a field were not likely to accomplish much; but by the combined efforts of many, much might be effected. He alluded to the claims that the London Society had upon the profession for support, as it was, in fact, the parent of all similar institutions in the kingdom. He referred to the evidences of its usefulness in its printed and published Transactions, and looked back with pride on the many celebrated names which had been connected with the society. After some complimentary remarks on the goodly number of members present, the worthy Chairman announced that the Secretary would read a paper on

COUNTER-IRRITATION, CONSIDERED AS A REMEDIAL AGENT,

which he, the Chairman, had brought before the society rather for the purpose of setting an example to other members, than for any novel views which the paper contained.

The paper in question took a very general and comprehensive view of counter-irritants, under which denomination the writer considered that at least nine-tenths of the articles of the materia medica might be classed. With the view of proving this position, he enumerated under the head of counter-irritants, or rather those medicines "which acted by producing a counter-impression upon the system," purgatives, emetics, sudorifics, and even blood-letting under certain circumstances. Thus he went on to explain, that when an emetic or purgative acted in any other way than simply by emptying the stomach or bowels, it exerted a beneficial influence upon the system, by the production of an impression counter to that exerted by the disease which the patient laboured under. The application of counter-irritation, by means of the skin and alimentary canal, were particularly dwelt upon as the two most important modes by which a counter-impression upon the system might be made. The mode by which emetics acted as counter-irritants, was illustrated by the fact of their administration frequently succeeding in arresting the progress of fever, which was not simply by emptying the stomach, but by producing an impression upon the system counter to that exerted by the disease. We do not profess to give more than a general outline of the more prominent points elaborately worked upon in a paper which occupied three-quarters of an hour in its reading; we have endeavoured to show, that the main object of the writer was a desire to establish the principle, that most medicines acted as counter-irritants, and not by producing any specific effect upon the system.

Dr. T. Thomson thought it would be desirable to determine which purgatives acted as purgatives simply, and which as counter-irritants. He should class aloes, scammony, and such articles of the materia medica, under the second class; whilst he should place castor-oil among the merely purgative medicines. He admitted, however, that the question was one of much difficulty. For instance, even medicines

that favoured the secretion of bile were not always counter-irritants; such was the case with mucilage, which, when the duodenum was in a state of irritation, promoted the flow of bile by soothing the excited mucous membrane of that organ.

With regard to the value of counter-irritation on the skin, he related a case in which nature had attempted to establish such an action without sufficient benefit to the patient. In this case, a boy about twelve years of age suffered, under the slightest exertion, from profuse perspiration about the right wrist. It appeared, on inquiry, that two years before he had laboured under scarlet fever; this was followed by porrigo of the scalp; and on the relief of this disease, the patient became subject to distressing headachs; these, in course of time, however, left him, and were succeeded by the perspiration alluded to, accompanied by some red spots on the right side of the body. The case was more curious, from the fact of the skin on this side being peculiarly sensitive, the slightest friction by flannel producing a permanent redness, while friction on the left side of the body was attended by no such phenomenon. Acting upon this hint which nature had given, an ointment containing tartar emetic was freely rubbed along the right side of the spinal column, with the effect of immediately removing the perspiration at the wrist, although it had continued for upwards of twelve months.

Dr. J. Johnson had been a little astonished at the statement of Dr. Thomson, that mucilage had the power of increasing the flow of bile. He was at a loss to know on what physiological or other principle it could so act. He granted that irritation in the duodenum might produce an obstruction in the flow of bile, but occasionally this very irritation was the cause of a profuse secretion of that fluid. While on the subject of counter-irritants, he would bring before the notice of the society one particular species of this remedy, which had come under his notice during the last two or three years, when he had occasionally been on the Continent. He alluded to carbonic acid gas, applied either as a local or general external remedy. In some parts of Germany there were large peat-bogs, from which carbonic acid gas was evolved in very large quantities, and which being collected afterwards in reservoirs, was conducted by tubes into baths for general use, or into smaller tubes by which it could be applied to any particular part of the body. In the first mode of its application, the gas was admitted into the vessel from beneath, and slowly ascended until it filled the bath. The patient's body was entirely immersed, his head being protected by a covering fitting close to the upper part of the bath, admitting the head only through an aperture in its centre. When the gas was locally applied, it was conducted in tubes of various diameters, and with such variety of force as the case might require. He had tried the remedy both locally and generally. It acted in both cases as a powerful stimulant. Its first action was the production of a momentary sensation of cold, which was followed by a feeling of heat, which, when the gas was applied locally, was sometimes so intense as to be scarcely tolerable. Perspiration succeeded to these phenomena. The application of carbonic acid in this manner was stated to be of great benefit in a variety of chronic diseases, in which there was no trace of inflammatory action. It was beneficial in tic-douloureux, atonic gout and rheumatism, and similar diseases. If the reports were to be credited, it also exerted a remarkably powerful influence upon the reproductive organs. Females who for years had sighed in vain for progeny, became fertile in a very short space of time after this gas had been applied in douches to the uterus, by means of a pipe introduced into contact with that organ through the vagina! Cases in which this beneficial result had followed its use were so numerous, that the subject merited consideration.

Mr. Hird mentioned a case of obstinate sciatica, in which all the remedies used had failed of affording relief, but which had been immediately and permanently relieved by the local application of the carbonic acid gas in the mode described by Dr. Johnson.

Dr. Thomson inquired whether the carbonic acid gas might not act as a sedative upon the internal organs, although its effect externally was stimulant, and instanced the action of champagne, soda-water, &c.

Dr. Johnson replied, that the carbonic acid gas, if administered internally, would be rapidly fatal. Several peasants and others had been killed from inhaling the gas, while they incautiously bathed their paralytic or otherwise diseased limbs in the reservoirs into which it was received.

Dr. Field referred to the action of soda-water, champagne, and other liquids containing carbonic acid gas; their action at first as stimulant, and gave a sensation of heat to the stomach; their sedative effect was experienced only when the gas was removed from the stomach.

Mr. Dendy made some observations on the importance of following nature in her efforts of establishing counter-irritation, in preference to the substitution of artificial means for the obtainment of the same end. He differed with Dr. Thomson in this respect, provided it was meant to establish a general rule from the case which he, Dr. Thomson, had related. The skin acted as a general eliminatory to the system, and was often the means by which nature established a counter-irritation to other diseases.

FEVER IN LONDON.

The PRESIDENT remarked, that fever was more prevalent at the present time than he had known it for several years past. It was much milder in its character than it was ten or twelve years ago; so that now it was very unusual to meet with any cases of a malignant kind. He attributed this general improvement to the more cleanly habits of the people, to better ventilation and diet; but more especially to the improved method of treating the disease, which at its onset, if not met with decided blood-letting, was almost universally submitted to antiphlogistic remedies of one kind or another. Dr. Lettsom had spoken of fever, in his time, as the most destructive of all diseases; whereas now, in private practice, where we saw one patient early, a fatal termination was scarcely ever expected, unless there had been some neglect or mismanagement on the part of the attendants.

MOORCROFT-HOUSE ASYLUM.

To the Editor of THE LANCET.

SIR:—I have noticed in the two last Numbers of THE LANCET some strong editorial remarks on the state of the metropolitan lunatic asylums, which seem to be called forth by the Returns Colonel Sykes has laid before the public. The deaths among the pauper lunatics almost exceed belief, and are enough to startle the most careless observer; and I trust some gentleman attached to one of the large public asylums in this county, will come forward and explain (if it admit of explanation) the cause of this dreadful mortality among these most afflicted of our fellow-creatures. It is high time that some practical inquiry should take place into the apparent want of success in the management of these establishments. I regret that the Metropolitan Commissioners in Lunacy do not visit the public asylums, as I believe them to be the most competent body to inquire into their management, from the experience they would bring to bear upon the subject. I quite agree with you that the commissioners should publish yearly Returns for public inspection, but cannot concur in your entire condemnation of them; to my knowledge they have rectified many flagrant abuses that previously existed in the private asylums in the neighbourhood of London. I also know that they have acted without favour or partiality. My principal object in addressing you is, to point out the unintentional injustice you have done *several* of the private asylums in this county, which, if you could spare the time to visit, I think you would acknowledge are well and most humanely managed. I am fully convinced their Returns would show a very different result from the public asylums; in fact, the recoveries in them are as large as the most sanguine could expect, when the nature of the diseases treated in them is considered. How often do we meet in these establishments with epilepsy, paralysis, and other diseases of the brain that are incurable, and must necessarily eventually destroy life. Is it reasonable to compare the mortality of lunatics, persons suffering from disease of the most important organ in the human frame, with that of criminals, individuals generally in robust health, and free from organic disease? I would rather say that you should compare the number of deaths arising in establishments for the treatment of mental disorders, with those cases of disease treated in hospitals, or occurring in private practice, for instance, with the various diseases of the chest. I agree with you, "that declamation upon such a subject would be misplaced." I am not in a situation to verify or contradict Col. Sykes's statistics, as regards the private asylums; but were I to judge from my own small establishment, I should say that some errors have crept into his statements. The Returns state, that in the six years ending May 31, 1839, 5108 patients were discharged from the private houses, viz., 1504 by deaths, 3604 by other causes, it does not inform us how many were cured of these 3604. On referring to my own Returns for the same period, I find that we received into the house 31 patients, of whom 16 were cured, 7 were removed, and 4 died, 4 now remains under treatment. This is a somewhat different result. I will, however, be more explicit, and send you the Returns of our establishment during the twenty years it has been under the management of my father, brothers, and self. During that time there have been received into the house 117 patients, of whom 60 have been cured, 18 removed from various causes (some of them much improved), 23 remain under treatment, and 16 have died; of which 16, 4 were upwards of 80 years of age, 2 of 70, 1 died from epilepsy, and 2 from inflammation of the brain. The truth of my statements can be ascertained by applying to the clerk of the commissioners. Now, I cannot see anything deplorable in these Returns; on the contrary, are they not what might be reasonably expected? There is one thing, however, I should tell you, our patients are never left to the care of "*irresponsible or cruel keepers.*" We live with them, partake of their amusements, eat with them, and never allow a servant (keepers we have none) to interfere with them. I have reluctantly addressed you on this subject, but I felt it due to myself and my friends to exonerate my character, as a professional man, from any share of such strictures as your last

Number contained. I am, Sir, your obedient servant,

ARTHUR STILLWELL, Surgeon.

Moorcroft House Asylum,
Hillingdon, near Uxbridge.

*** We very readily give insertion to Mr. Stillwell's letter, although he will perceive that our last article does justice to *several* of the smaller licensed houses, in which the mortality is half as high as it is amongst the paupers. Mr. Stillwell, who is well acquainted with the subject, explicitly corroborates our statements. "The deaths," he says, "among the *pauper lunatics almost exceed belief, and are enough to startle the most careless observer.*" If he were to judge from the experience of his own asylum, "he should say that some errors had crept into the statements." The facts are, nevertheless, as true as they are incredible. The Returns, which we have before us, were given in full detail for each separate house, and were made by the *proprietors themselves* to the Metropolitan Commissioners.

REFORM IN THE WESTMINSTER HOSPITAL.

WANT OF RESIDENT MEDICAL OFFICERS IN THE METROPOLITAN HOSPITALS.

To the Editor of THE LANCET.

SIR:—I request you will be good enough, in your forthcoming Number, to correct an error which has crept into your account of the proceedings of the quarterly board, held at the Westminster Hospital on the 8th instant. I am represented by your reporter, as stating that the house-surgeons of the institution, during the five years that I was attached to it, were incompetent persons. I am sure this mistake of your correspondent was committed unwittingly, and arose from the extreme brevity of his report. The young men alluded to were, considering their extreme youth, and that they underwent no previous ordeal, possessed of attainments which were creditable to them; and, in fact, they are at the present time most respectable members of our profession.

In order to make clear what I really stated, and to conciliate your support to my proposal, I beg to be permitted to lay before your readers the pith of the argument which I employed in my address to the board of governors. I stated that,

1. The insufficiency of the care which was bestowed upon the in-door and out-door patients, did not arise entirely from the neglect of the physicians and surgeons, but from the imperfection of the existing arrangements.

2. Under the present regulations it has been physically impossible for the principal medical officers to attend in person to each patient committed to their care.

3. The number of physicians and surgeons at present attached to the institution is eight; each of these is required by the laws to devote six hours weekly to their patients. The sum total of the hours which they are collectively required to bestow in this way, during the year, amounts to 2496 hours; these multiplied into minutes form the sum of 149,760.

4. But the annual number of patients is 10,000; and, upon a moderate average, six visits may be allowed to each of these. The total number of visits, to which the above stated number (149,760) of minutes are to be devoted, is 60,000, forming a proportion of *somewhat less than two minutes and a half to each interview.*

5. Fairly to ascertain the condition of a patient, and to consider and determine the means of treatment, would require more than double the time at present allotted by the regulations to the purpose. Hence it follows that double the number of medical men would not, according to the actual system, be equal to the performance of the duty.

6. There are two modes in which the admitted defects of duty might be removed, without altering the present principle of the regulations. 1st, By increasing the number of the principal medical officers; 2nd, By requiring a greater amount of their time to be applied to their hospital engagements.

7. Both the expedients just named would be attended with injurious consequences. 1. It has been shown that, in order to perform the duty effectually on the present plan, the increase in the number of the medical men must be considerable. These appointments would, after such a multiplication, cease to be an obstruction, and, consequently, fail to be an object of ambition to men of high attainments. 2. The drudgery which the adoption of the second expedient would inflict upon the physicians and surgeons, would not be borne by men of a high order of talent. An imperative law of nature demands that the pursuits of every man should be adapted to his mental calibre. The result, then, of the adoption of either of the expedients just named, must be the determination of our hospital medical functionaries.

8. It is a principle, however, not to be questioned, that our hospitals ought to supply the highest medical skill to the poor applicants.

9. The interests of science (which is but another name for the interests of the community) require not only that our hospitals should be depositaries of the highest actual medical skill; but, that by discoveries as

to the nature of disease, and by the invention of new remedies, they should daily contribute to the exaltation of this skill, as well as to its diffusion amongst the people.

10. The exertions of mediocre medical men are obviously inadequate to produce such results.

11. Since the fulfilment of the theory of the present regulations of our hospital is inconsistent with the services of any but inferior men, and it being clear that such agents are incompetent to the true ends of such institutions, it is to be concluded that this theory is erroneous, and that it ought to be abandoned.

12. The theory of the present regulations of the Westminster Hospital, and, I believe, of all others, is this, that the principal medical officers shall attend personally to every one of their patients. But this has been shown to be impracticable, without giving rise to great evils. The only principle that can be applied, consistently with the high aims of these establishments, is the analysis of the cases, and their discrimination into classes.

13. Of all the cases that present themselves to the consideration of the student at our public hospitals; 1. Many may be referred to well-defined departments in nosology, and present nothing in their progress to interest the inquirer, or to require the exercise of superior skill; 2. Others, though well-known and understood, may, by their gravity and importance, call for the care and superintendence of the higher authorities; 3, and lastly, There are cases constantly presenting themselves, whose deviations from the ordinary natural history of disease, and whose hebetude to all the excitements of therapeutic agents, afford appropriate objects of contemplation to the profoundest intellect, and adequate exercise for the diagnostic powers of the most acute.

14. Adequately to perform this analysis, it is plain, requires a mind of no ordinary excellence, and constitutes a duty, which, I believe, I was perfectly justified in saying, was far above the capacity of the house surgeons and clinical assistants, who are appointed to transact the minor medical business of these eleemosynary establishments.

15. To fulfil this important and highly responsible function, requires an officer of superior capacity; but such an one as the ranks of our professional *alumni* can without difficulty supply.

16. In order to meet these exigencies, and to remedy certain other deficiencies in the discipline of the Westminster Hospital, I propose to the governors of that institution that a post be created with an adequate salary, and that the duties attached to this post shall be carefully defined.

17. The duties of this officer should consist in forming the analysis I have described, and in superintending the treatment of *all* the cases during the absence of the principal medical men.

18. The appointment should be given to the candidate who should pass the best competitional examination, no matter what part of the world he came from.

19. What restrictions should be imposed, as to the admission of candidates, would be a matter for future consideration.

20. The following good consequences, amongst many others, would arise from such an appointment:—1. An additional opportunity for distinction would be opened to the medical student, whose abilities do not happen to be associated with the possession of means sufficient to keep him in an advantageous field for their exercise. To such a candidate the appointment affords a stepping-stone to the highest professional rank; and one man of genius less would be compelled to waste his energies in trifling and monotonous pursuits, rendered necessary, to obtain a subsistence, either in the public service or private practice. 2. Science would, to a given extent, be promoted by the stimulus which such a competition would give, as well as by the contributions to her stores, which an official thus selected would inevitably supply. 3. Where highly-gifted persons fill subordinate offices, the character of those who aim at the superior offices would necessarily be improved. Men of low abilities, by whatever force of nepotism they may be supported, would hardly aspire to stations where their ignorance and incompetence would be rendered more salient by contrast.

I need not dwell, Mr. Editor, in a communication addressed to your readers, on the splendid opportunities which a residence in our ample hospitals, those rich museums of living disease, would afford to a mind endowed with inventive powers, and carefully trained to inductive habits. The animal chemist and the microscopist have supplied us with a rich store of facts; but their labours would be barren, unless they were supported by the concurrent industry of the acute physiologist, who pursues disease through all its doublings and windings, and exposes its secret habitudes to the public gaze.

I feel confident that I may count upon the powerful support of THE LANCET, in my attempt to obtain this boon from the governors of the Westminster Hospital, because it is consonant with the principles always advocated by you. That my success will long be impeded by the force of prejudice and of particular interest, I do not doubt; but I will not fail, upon all proper and becoming occasions, to urge the adoption of a measure so replete with benefit to

science, and consequently to humanity. I am, Sir, your obedient servant,

D. O. Edwards.

15, Cheyne-walk, Chelsea,
Sept. 16, 1840.

ALLEGED BREACH OF ETIQUETTE,

AND WANT OF COURTESY BETWEEN MEDICAL PRACTITIONERS.

To the Editor of The Lancet.

Sir:—May I beg early insertion in a corner of your valuable Journal to the following statement and letter. I am, Sir, your obedient servant,

Joseph B. Gray, M.R.C.S.,
Licentiate of the Society of Apothecaries.
Duke-street, Chelmsford,
Sept. 22, 1840.

On Friday evening, September 4th, 1840, a young woman, named Hannah Challis, a housemaid in a respectable family resident in this town, called at my house, and requested my advice under the following circumstances:—A month since, whilst wringing some sheets and other heavy linen, she ruptured some fibres of the posterior ligament of the lower radio-ulnar articulation. This was of course followed by protrusion backwards, and considerable rising of the little head of the ulna. She sought medical advice immediately; but not profiting under the lotions and poultices which were enjoined, she felt anxious to consult another surgeon, and this the rather, as she had been told that a twelvemonth would most probably elapse before she fully regained the use of her hand. Under these circumstances, as has been said, she applied to me, when I detected at once the nature of her accident; and, in order to ensure both support and repose to the injured part, applied splints well padded to the inner and outer surfaces of the fore-arm. At that time she gave me distinctly to understand that she was entirely free to place herself under my care, and I consequently felt no hesitation in at once undertaking the management of her case. On the following Monday, however, after a special message from Mr. Richard Cremer, her previous medical attendant, and, in compliance with the request of her mistress that she would call and inform him that she had consulted me, and was then under my care, she proceeded to his surgery. According to her statement of what then transpired, Mr. Richard Cremer seemed very angry with the news she had brought him, and, having seized her arm, *proceeded to rip up the bandages and tear off the splints with which I had enveloped the limb;* notwithstanding her entreaties that "Mr. Gray might be sent for, as she thought it unhandsome that the cradle should be removed unless he were present." Mr. Richard Cremer, however, having surrounded the wrist, in lieu of the splints, with a strip of adhesive plaster, proceeded to inform her that "had the splints been suffered to remain upon her limb, she would for ever have lost the use of her hand;" a declaration repeated by him subsequently to her mistress. She was then told to call at my house, and leave the splints, "and if any questions were asked, to say that they were of no use to her;" which, however, she did not think proper to do. It may be right to mention, that these proceedings took place in the presence of his father, Mr. Lovel, his partner, and his dispensing assistant. These circumstances having been communicated to me at my next visit to my patient, accompanied with an urgent request that I would re-apply the splints, I felt it due to myself as a young man, and to my reputation as a surgeon in the town, to take my patient to Sir Astley Cooper. The result will be seen from the following letter, which I this morning addressed to Mr. Richard Cremer, and which has been returned without note or comment:—

"Duke-street, Chelmsford.

"To Richard Cremer, Jun., Esq.

"Sir:—In order to satisfy your mind upon certain points, with some of which, at least, it seems to be wholly unacquainted, and to vindicate my own conduct, which has been most grossly assailed, I write to inform you—

"That Hannah Challis never applied to me as *your* patient, and that her seeking my advice was *entirely her own spontaneous act, with which I and my friends had nothing whatever to do.*

"That the circumstance of her having lost the use of her hand, appeared to me to be the consequence of her having ruptured some fibres of the posterior ligament of the lower radio-ulnar articulation, with consequent protrusion *backwards* of the small head of the ulna; which opinion seemed clearly confirmed by the history she gave me of the accident, that it happened from the violent and long-continued pronation of her hand in performing heavy laundry-work, a month or six weeks since.

"That in consequence of your behaviour and language with respect to myself, and especially in consequence of your statement, more than once reiterated to Hannah Challis, and subsequently repeated to her mistress, that 'had the splints been suffered to remain upon her arm, she would for ever have lost the use of her hand, and perhaps of her arm,' I felt it due to myself, under such a direct imputation of incompetency and mala praxis, to seek the opinion of the first British surgical authority.

"Sir Astley Cooper has seen Hannah Challis, and has confirmed my views as to the nature of the accident, and himself pointed out, upon seeing her wrist girt by a

plaster, the necessity for more efficient support, by splints and pads, upon the outer and inner sides of the limb.

"I shall not notice your insinuation that Hannah Challis had been deceived, and had not seen Sir A. Cooper, farther than to state that his residence is Conduit-street, Bond-street.

"I cannot conclude this letter without stating, that under such provocation as I have received, an apology between gentlemen is usually considered due. From Mr. Cremer, however, I require none. With feelings of indifference I began this letter, and with feelings of indifference I end it. I hope its moderation may contrast with the violence and blindness of the passion which has exposed Mr. Cremer, did I choose to avail myself of the opportunities afforded me on every side, to severe recrimination. I am, Sir, yours, &c. &c.

"JOSEPH B. GRAY."

As I have previously mentioned, this letter was returned without note or comment from Mr. Cremer. But, Sir, are transactions so inconsistent with the spirit of a liberal profession, to be allowed to pass unnoticed and unexplained? Are young surgeons thus to be injured at the anger or caprice of men who, if they cannot boast of higher professional attainments, are yet, in the estimation of the public, supported in all their statements and assertions, on the ground of what is termed their "*great* experience?" I would appeal to my brethren of the profession; for, in circumstances such as these, our only consolation and recompense is to be found in their support and sympathy, if such conduct can be considered fair, honest, manly, or generous. And, Sir, I would ask of you—for I must confess to a very shallow acquaintance with the mysterious subtleties of medical etiquette—if it can be reconciled with the courtesies and duties which should characterise the intercourse of members of equal standing in the medical profession. I am, Mr. Editor, your obedient servant,

JOSEPH B. GRAY, M.R.C.S.

MR. WARBURTON'S MEDICAL REFORM BILL.

To the Editor of THE LANCET.

SIR:—As Mr. Warburton has at last published his intended Bill on Medical Reform, it would be well for the members of the medical profession throughout the United Kingdom to bear in mind what their objects should be at present, and what they can do so as to forward the cause most effectually. The fact of any bill having been read a second time in the House of Commons is considered as an admission of the principle on which it is founded, and the necessity of some measure of the kind. It is allowed to be printed, each member to have one or more copies, and before being read a third time and passed, it has to go through a committee of the whole house. This is the period when discussions take place as to the details; when clauses are struck out or altered; when new clauses are inserted, and verbal alterations suggested and made. Mr. Warburton, therefore, having got thus far, it should be our duty by every means in our power to support *the principle of his Bill* by pouring in petitions to both Houses of Parliament during the next session, the same as was so effectually done during the last. Every member of the medical profession who is favourable to some such measure, should embrace every opportunity of preparing the minds of members of Parliament for the discussions which will to a certainty take place on nearly every clause of the Bill. In place of cavilling and objecting to Mr. Warburton's Bill on account of its imperfections, our object must be to assist you, Mr. Hawes, Mr. Hume, Mr. French, and others, to make it as perfect as possible. If it be true that you and Mr. Hawes have, in hand, bills differing considerably in their details from Mr. Warburton's, but being the same in principle, surely there will be little trouble (if the medical associations continue unanimous) in procuring a good bill, composed of the best parts of the three. Mr. Warburton at least deserves credit for his candour in stating, in his place in Parliament, that he was afraid his bill would not please any party; and the circumstance of his not being a member of the medical profession, will account for his omission of some very important details, such as the suppression of quackery and quack medicines, &c. &c. It has taken a long time to bring the subject so far as it has already proceeded, and it is to be hoped that no petty differences in opinion among medical reformers will prevent them from securing the best bill they can get next session of Parliament. I am, Sir, your obedient servant,

WM. SIMPSON.

110, Guilford-street, Sept. 26, 1840.

REJECTION OF THE EIGHTEENPENNY VACCINATION AT BISHOP STORTFORD.

To the Editor of THE LANCET.

SIR:—Had the members of the profession been sooner aware of the great injury which some of the clauses in the Vaccination Act will inflict upon them, I feel assured that the table of the House of Commons would have been covered with petitions against it.*

* There was no want of warning against its foreseen operation and effects, in this Journal.—ED. L.

It is now too late, and they will have to suffer for such apathy and supineness. It is, however, most gratifying to read, in your last week's LANCET, of the stand which has been made against the system of oppression of Somerset House,—I allude to the resolutions of the medical men of St. Columb; and it is with very great pleasure that I can add another example of determined opposition to the eighteenpenny vaccination, as well as to that which includes the rich with the poor.

The Board of Guardians of the Bishop Stortford Union requested the attendance of the medical men of that town, on the 24th inst., to know if they would agree to vaccinate all cases for one shilling and sixpence each; the latter demanded two shillings and sixpence, and that the children of the better classes should be excluded from the contract. The Board then came to a resolution not to agree to these terms, when the medical men immediately quitted the room, and have come to an unanimous resolution not to alter their demand. This is honourable and just. Let the guardians agree with the medical men to vaccinate the poor only, and leave the richer to their respective medical attendants. If, however, the richer man insists upon having his child vaccinated at the expense of the parish, he, at once, by receiving such parochial relief, disqualifies himself from using his franchise. For no one who receives any *aid from the parish can give a vote at any election.* I am not aware that this view of the case has been before noticed. In the sincere hope that you will soon have to record many imitations of the spirited conduct evinced by the medical men of St. Columb and Bishop Stortford, I remain, Sir, your constant reader,

JUSTITIA.

Sept. 26, 1840.

EIGHTEENPENNY VACCINATION AT EXETER.

THE following resolutions are worthily signed by *a peer of the realm!* What a notion of the self-respect and utility of the profession must noble lords entertain, before bringing themselves to attach their names to such documents!—

"St. Thomas' Union, Sept. 18, 1840.—Resolved, 1st, That the districts to be formed under the Vaccination Act, be co-extensive with the medical districts for this union; and that the medical officers for the union, be the vaccination officers; and that when such *officer shall cease to hold one office, he shall also cease to hold the other.*

"2nd. That the sum of ONE SHILLING AND SIXPENCE per case, be paid for each successful case of vaccination, as recommended by the Poor-law Commissioners.

"3rd. That the medical officers be furnished with a copy of these resolutions, and that they be requested to forward the names of the *places*, the *days*, and the HOURS, they would recommend as the stations and times of attendance for vaccination in their respective districts, with as little delay as possible.

"DEVON, Chairman."

SIXPENNY VACCINATION!

"IN the 'Stockport Advertiser' of Sept. 25th," says a correspondent residing at Holmfirth, in Yorkshire, is "the following unparalleled advertisement, a copy of which I send, in order that it may, through THE LANCET, obtain complete publicity amongst the faculty. A single comment on it from me would be superfluous. They are following up Mr. Cooper's proposition with a vengeance!"—

"STOCKPORT UNION.—HYDE DISTRICT.

"*To Surgeons.*—The board of guardians of the above union will proceed, at their next weekly meeting, to the appointment of a legally-qualified medical practitioner for the above district, comprising the townships of Hyde, Werneth, Romiley, and Bredbury, to vaccinate all persons in that district, under the provisions of the new Act for the extension of Vaccination. The terms given will be SIXPENCE FOR EACH SUCCESSFUL CASE.

"Applications to be sent to the clerk of the union, on or before Wednesday next. Further particulars may be known on application to the clerk of the union. By order of the board,

"Henry Coppock, Clerk to the Union."

"Stockport, 24th Sept., 1840."

THE VACCINATION ACT AT HORSHAM.

(*From a Correspondent.*)—At a conference of the medical men of Horsham, held at the request of Mr. W. Stedyman (the clerk of the Board of Guardians), to take into consideration the Vaccination Act, it was agreed to by four practitioners, that they "were willing to vaccinate all persons who *applied at their residences* at 2s 6d per case." The other practitioners in the town declined contracting altogether, considering even 2s 6d per case too inadequate a remuneration for such a large rural district. Should, however, the Poor-law Commissioners refuse to sanction the half-crown per case contract, *then* all the medical men in Horsham are quite ready to vaccinate, *gratuitously, all necessitous persons*, and such as think they cannot afford the usual fee; believing such to be a more honourable course of procedure, than that of degrading a liberal profession by entering into the *eighteenpenny* contracts of the Poor-law dictators.

Horsham, Sept. 15.

THE COMMITTEE ON DIGESTION.

To the Editor of THE LANCET.

SIR:—As I am one of those who regard with much interest the struggles in which you have been so long engaged, for the advancement and dignity of our profession, I could not avoid admiring the dauntless manner in which you lately stripped off the mask from a pitiful plagiarist. I have seen the day when the periodical medical press would have shuddered even at the thought of thus attacking vice in its stronghold; but you have been the pioneer of the freedom of our press, and I hope soon to see you the instrument of our professional liberties. This might be regarded as flattering language, if the history of THE LANCET had not become identified with that of the medical profession.

In your last Number we are furnished with a list of the members appointed by the "British Association for the Advancement of Science," on *the Committee of the Chemistry and Physiology of Digestion*. Permit me to ask, whether the association has acted advisedly, in allowing the name of a person to appear on one of their committees, against whom unrefuted charges of piracy so painfully exist? I do think that some respect ought to be paid to public feeling, and that every honest inquirer after truth has a right to demand why the association has thus acted. Can a set of highly-respectable, scientific men of science be induced to act with so dangerous a personage?

Surely, Sir, our unfortunate profession is not destined to be for ever without the wholesome control of public opinion; and the time is now passed when any association of character can appoint with impunity to responsible offices a man whose reply to very temperate, grave, and clear imputations of mendacity or plagiarism, was a medley of vituperation that was chiefly calculated to divert the heavy accusations, instead of refuting them. I am, Sir, your constant reader,

PHILIATRUS.

Sept. 28, 1840.

TO CORRESPONDENTS.

The "*Observations on Scarlatina*" present no point of novelty, either as relates to supposed cause or treatment, which would be likely to interest our readers. We shall be glad to hear from our correspondent when a subject of greater attraction shall come under his notice.

Communications have been received from *Mr. M'Donald, Mr. Clay, Dr. French, An Apothecary's Apprentice, Mr. Tamplin, Mr. James J. Adams, Mr. Wade.*

We should feel obliged to *Mr. Tamplin* for the promised communication.

Speculum.—Although heartily tired of the subject, we are not so of our correspondent, and shall feel much pleasure in receiving his communication.

The communication of an "*Observer of Men and Things*" has been received.

Dr. W. (St. Thomas's-street).—We never insert reviews which have not been written under our own directions. Besides, we should not assign to the book the same character as has been given to it by our correspondent.

M. A.—We are not accustomed to recommend particular schools of midwifery. The comparison of merits is not easily made. If the query were inserted, "Which is the best place in the British dominions to obtain a knowledge of midwifery, or does the Continent present a preferable school?" as many places might be named in reply by correspondents as there are schools in the kingdom.

The letters on "systematic exercise as a means of improving health," and on the tincture of the muriate of iron in diabetes mellitus, next week.

The remarks on the advertising doctor who "ruins his servant-maids," cannot appear in print, whether authenticated or not. It is the concern of the parish, not of the profession.

The case of aneurism of the arch of the aorta must have been mislaid. It shall be searched for.

The complaint of *Mr. T. C. Lewis* against the proceedings of Captain Tomlin, next week.

Stammering.—Reference to an article or review on the subject in a former number may be obtained at the office.

Dr. Cock may deny all that *Justitia* has stated. The letter cannot be inserted anonymously.

The letter of *Mr. Bedingfield*, next week.

Justitia, if he will make the case his own, will see the impropriety of our subjecting the private practice of Mr. W. to the criticisms of an anonymous correspondent; and those parts of *Justitia's* letter which might legitimately be published, are too much intermingled with the rest to allow of their separation with satisfaction to our correspondent. In his opinion of the vectis of Dr. O. we agree.

We shall next week give some specimens of the INTRODUCTORY LECTURES of the new medical session, commencing Oct. 1, 1840.

The question put by *Mr. John Pearce* is one to which he should frame his own reply, after a personal examination of the Act; for surely, in a point of so much weight, it will not be too much trouble to him to make that examination.

We are unable to find room, at the present moment, for the letter of *Mr. James J. Adams*, entitled "Adams's new and safe Mode of performing the Operation for Strabismus with remarks and observations."

Showing the No. of Deaths from all Causes, Registered in the 5 Weeks, ending Saturday, Sept. 12, 1840.

Causes of Death.	August. 8 to 15	16 to 22	23 to 29	30 to Sep. 5	Sep. 6 to 12	Weekly Av. 1838, (corrected.)
Small-Pox	20	12	25	23	22	76
Measles	18	28	21	21	13	12
Scarlatina	37	44	35	48	40	30
Hooping Cough	16	16	8	16	9	42
Croup	10	6	6	6	6	7
Thrush	13	15	20	12	10	6
Diarrhœa	31	20	22	20	40	8
Dysentery	2	4	3	3	1	2
Cholera	6	6	1	6	10	.3
Influenza	1	1	1	....	1	1
Typhus	26	27	23	35	23	82
Erysipelas	3	5	1	8	1	8
Syphilis	....	3	....	1	....	1
Hydrophobia	....	....	....	....	....	.2
TOTAL	185	185	166	190	176	276
Cephalitis	9	17	22	12	15	11
Hydrocephalus	37	36	36	41	43	35
Apoplexy	20	17	11	18	14	20
Paralysis	10	10	19	13	21	15
Convulsions	66	68	81	58	59	68
Epilepsy	3	....	4	....	5	4
Insanity	....	....	....	....	1	1
Delirium Tremens	4	1	1	1	...	1
Dis. of Brain, &c.	11	8	7	8	14	6
TOTAL	160	157	181	151	172	161
Quinsey	2	4	....	1	2	2
Bronchitis	5	7	7	1	4	9
Pleurisy	....	....	1	3	2	2
Pneumonia	42	30	32	44	38	74
Hydrothorax	....	1	7	5	5	6
Asthma	10	8	4	12	4	29
Consumption	146	142	131	128	137	152
Dis. of Lungs, &c.	10	11	8	12	8	11
TOTAL	216	212	190	206	200	285
Pericarditis	1	1	1	....	1	.3
Aneurism	....	2	1	....	....	.5
Dis. of Heart, &c.	18	9	10	14	25	15
TOTAL	19	12	12	14	26	16
Teething	23	24	25	27	31	15
Gastri.—Enteritis	47	39	25	40	38	18
Peritonitis	2	2	3	2	....	1
Tabes Mesenterica	9	5	5	9	11	3
Ascites	2	....	....	1	1	.3
Ulceration	....	2	0	1	....	1
Hernia	1	....	1	1	1	2
Colic or Ileus	3	1	3	2	2	4
Dis. of Stomach	11	11	6	7	3	4
Hepatitis	1	1	....	1	3	1
Jaundice	3	2	2	1	2	2
Dis. of Liver, &c.	11	5	14	4	9	8
TOTAL	115	92	90	96	101	59
Nephritis	...	1	1	2	....	.5
Diabetes	1	....	....	....	....	.4
Stone	1	1	1	....	....	.4
Stricture	....	1	1	....	....	.6
Dis. Kidneys, &c.	2	4	4	1	2	3
TOTAL	4	7	7	3	2	5

Causes of Death.	August. 8 to 15	16 to 22	22 to 29	30 to Sep. 5	Sep. 6 to 12	Weekly Av. 1838, (corrected.)
Childbed	2	9	2	3	6	8
Ovarian Dropsy	....	....	....	....	....	.3
Dis. of Uterus, &c.	1	3	1	1	1	2
TOTAL	3	12	3	4	7	11
Rheumatism	1	....	2	1	3	4
Dis. of Joints, &c.	1	3	4	3	1	4
TOTAL	2	3	6	4	4	8
Ulcer	....	....	....	....	1	.4
Fistula	....	....	1	1	....	.4
Dis. of Skin, &c.	....	1	....	....	....	.4
TOTAL	....	1	1	1	1	1
Inflammation	9	4	6	2	5	19
Hæmorrhage	3	2	3	1	1	4
Dropsy	31	35	28	26	34	
Abscess	6	6	4	4	3	4
Mortification	7	6	3	4	4	4
Scrofula	2	1	4	3	1	1
Carcinoma	6	8	13	9	8	6
Tumour	1	1	2	1	1	1
Gout	1	2	....	1	2	1
Atrophy	9	7	7	11	9	4
Debility	25	27	20	19	19	12
Malformations	2	2	1	....	1	1
Sudden Deaths	6	11	6	12	11	13
TOTAL	108	112	97	93	99	105
Old Age	46	56	46	49	42	82
Intemperance	....	....	....	....	2	.4
Privation	1	....	....	....	....	.6
Violent Deaths	28	25	20	34	20	27
TOTAL	29	25	20	34	22	28
Causes not Spec.	1	1	1	3	1	13
Deaths, all Causes	888	875	820	857	853	1031
No. of Week	32	33	34	35	36	....

1840.	Ages. 0 to 15	15 to 60	60 & upwards
Aug. 8th to 15th	507	235	144
„ 16th to 22nd	474	265	136
„ 23rd to 29th	457	234	128
„ 30th to Sept. 5th	447	258	151
„ Sept. 6th to 12th	444	282	121
Weekly Average, 1838	484	365	199

	Estimated Pop. 1840.	Aug. 8 to 15.	Aug. 16 to 22.	Aug. 23 to 29.	Aug. 30 to Sept. 5.	Sept. 6 to 12.	Weekly Av. 1838.
West Districts	308,921	120	137	122	126	110	169
North Districts	414,458	172	176	148	163	166	183
Central Districts	369,722	176	149	157	160	169	206
East Districts	411,634	189	191	190	194	211	249
South Districts	450,265	228	222	203	214	197	249
	1,955,000	888	875	820	857	853	1031